THE CAMBRIDGE SCHOOL OF PRAGMATISM

Volume 1

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The Foundations of Pragmatism in American Thought

The Cambridge School of Pragmatism
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THE PRAGMATISM OF CHARLES S. PEIRCE

With an Introduction by
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PREFACE

The Cambridge School of Pragmatism consisted of the founders of pragmatism, Charles S. Peirce and William James, along with Josiah Royce and the next generation of their pragmatic-minded doctoral students at Harvard University from the 1880s to 1910. The most prominent of these students, included in this four-volume set, were George Santayana, John Elof Boodin, and Clarence Irving Lewis. The members of the Cambridge School of Pragmatism all lived in Cambridge, Massachusetts, for a portion of their careers and had a relationship with Harvard University. Peirce, a graduate of Harvard, first formulated the principle of pragmatism during meetings of the Metaphysical Club in private homes around Cambridge during the early 1870s. Peirce later gave lectures in Cambridge elaborating upon his views, which he had come to label "pragmaticism." The foremost promoter of pragmatism to both the academic and public realms was Peirce's close friend William James, also a Harvard graduate and a member of the Metaphysical Club, who taught as a professor of psychology and philosophy at Harvard for many years.

These two giants of American philosophy, whose key writings on pragmatism are contained in the set's first two volumes, in turn deeply influenced several other prominent Cambridge philosophers who incorporated pragmatism into their systems of thought. The philosophies of Josiah Royce and John Elof Boodin, represented in the third volume, were the most important pragmatic varieties of American idealism during the first half of the twentieth century. The philosophies of George Santayana and C. I. Lewis, represented in the fourth volume, were the most significance varieties of pragmatic naturalism in American philosophy during that same era.

The Cambridge School of Pragmatism brings together in one collection the most significant and influential writings about pragmatism by these major American philosophers. Each volume also contains a select number of critical responses to their views, by other pragmatists as well as non-pragmatists. By bringing together this assembly of key writings, scholars and students will be able to focus on the pragmatic thought of each of these thinkers, and then also critically compare their positions to appreciate these convergent and divergent views on pragmatism. Together with the companion set, *The Chicago School of Pragmatism* (2000), scholars can access a complete collection of the central writings by the founders and early participants in the pragmatism movement in American philosophy from the 1870s to the 1930s. Spanning roughly fifty

years, the 108 pieces of *The Cambridge School of Pragmatism* are brought together from several dozens of now obscure and increasingly rare books, journals, and archival sources. Editorial modifications are limited to spelling, punctuation, and footnote corrections, to keep as close to the original as possible. This collection will be indispensable for the study of American intellectual history, and especially the evolution of American philosophy.

INTRODUCTION

Charles S. Peirce's turn toward pragmatism began as early as his first reading of Kant's *Critique of Pure Reason* in the mid to late 1850s. Some say that it began even earlier, when the young Charles was given a chemistry kit to play with and set out to initiate himself to the art of scientific observation and inference. Indeed, it was not long afterward, as rudiments of logic began to seep in his brain at age twelve, that he started to wonder about the art behind the art, the *ars artis* of the logic of reasoning and discovery.

A voracious reader, young Peirce had become well acquainted with the entire scope of the western history of philosophy by the time he reached his mid-twenties. He had studied the ancients, the scholastics, the moderns, and his own contemporaries, always with a burning desire to understand not so much their representations of man, nature, the universe, or the deity, as their theories of theory, their explanations of the activity of thinking, of conceptualizing, of finding truth, and of the fundamental nature of the reality that allowed such activity to take place. Peirce (1839–1914) was born and raised in Cambridge, Massachusetts, at a time when Harvard University was the center of the American intellectual universe, the dew point at once of the literary, the humanistic, and the scientific atmospheres. Peirce witnessed the fast-paced evolution of an academic institution attuned to the latest advances of thought. The optimism that prevailed in all departments of inquiry was infectious and contributed to Peirce's early conviction that devoting his life to studying the inner mechanisms of sound reasoning would help philosophers and scientists overcome the age-old anxiety of wondering, always, whether one could ever trust in reason's capacity to grasp a reality that always seems to elude just as new explanations get formulated.

As early as 1859 Peirce declared "that there was no need for transcendentalism."[1] This was in effect a refusal directed to all philosophers, not Kant merely, who, when confronted with antinomies that the premises of their system would leave unexplained, would ingeniously resort to the impatient strategy of framing an ad-hoc hypothesis that would seem to explain them away. Transcendentalism, with its desperate search for an intangible source of objective validation of our synthetic knowledge, was such an ad-hoc

[1] R921: 22–23, 21 May 1859. R followed by a number refers to a manuscript listed in Richard S. Robin, *Annotated Catalogue of the Papers of Charles S. Peirce* (Amherst: University of Massachusetts Press, 1967).

hypothesis, and so was dogmatism, with its exaggerated hope that knowledge could be securely deduced from a priori first principles. Ad-hoc hypotheses are elaborate ways of suggesting that there are levels of realities that are impervious to representation, and that in the end we need to recognize as either foundational or ultimate some version of the unknowable, sometimes made more attractive through clothing sufficiently opaque to hide the emptiness within. But Peirce rejected all forms of skepticism with their artificial distrust of our representational capacities since they are bound to beg their own questioning. The cognitive optimism of the time, the explanatory power of new scientific theories such as evolutionism, the formulation of far-reaching laws such as that of the conservation of energy, did not allow for speculative gloom. Peirce thus proposed his own alternative philosophical attitude, one that he, at first, and somewhat metaphorically, called "faith" in a treatise of metaphysics written around 1862. By faith he did not mean a religious but a metaphysical attitude that was neither overly critical nor overly dogmatic, but that sought to strike a balance by requiring that one accept without artificial justifications what common-sensical observation simply forces us to accept: faith is neither skeptical nor naïve or credulous; it rejects paper doubts as much as unmotivated or immediate beliefs – it is, as Peirce came to dub it more than forty years later, a critical common-sensism, an attitude that trusts our natural instinct to come up with answers that are more likely to strengthen our theories than weaken them, simply because the inferential powers we are endowed with, though fallible, have long survived the vicissitudes of time and life.

The moment one admits that everything is "of-thinkable," representable, or cognizable, the moment one is invited to reconsider the logic of thinking and to stop separating it too quickly from its object at either end: the source of predication and the fulfilled aim of its expression. As Peirce began to study afresh the logical conditions that govern the formation of any synthetic representation, of any ampliative judgment with a bold claim for truth, he dived at a depth that none of its worthiest predecessors, in their haste, had ever attempted to reach. Peirce got to the bottom of the ocean, saw that it was itself bottomless, and he turned that bottomlessness into a principle leading not to desperate metaphysical acts but to an actual understanding of the logic of belief – in other words, he saw that where others would likely despair over an infinite regress, he himself had hit upon a continuum that actually "made" sense because it was so constituted as to generate sense. Thus was born, in the mid to late 1860s, Peirce's new list of categories, a new account of how the old manifold of senses could be reinterpreted into a general conception whose very indetermination was an energetic call for determination, for representation, for the instauration of the "unity of consistency," that particular kind of unity that results from the dynamic and teleological union of signs.

From Peirce's early logical insight, pragmatism followed as a logical consequence, that is, as the logical unwrapping of much that was epistemologically and metaphysically entailed in Peirce's categorial analysis of the formation of judgments or inference in its broadest sense. The anti-Cartesian writings of 1868–69 consolidated the new platform Peirce proposed for philosophy, making it clear that there was no room within the representational continuum for the possibility of the unmediated knowledge of either oneself (introspection) or anything external (intuition), for logic showed that all knowledge was mediated by signs, so much so that attributing reality to the uncognizable amounted to a contradiction. As a matter of fact, reality itself, being essentially cognizable, and thus made of representable stuff, became defined, not as the object of individual inference for the latter is far too fallible, nor even as the object of social inference (for the same reason), but as the aim of the infinite inquiry of a limitless community of conversing interpreters. Reality, thus, as "would-be" result of an infinite supra-individual, supra-social, continuous process of information and reasoning, needed to be viewed both as that which resists the finite grasp of any thought – hence reality's independence – and as that which, through its own indetermination, determines and adjusts the direction of all truth-seeking inquiry – hence reality's dependence. Peirce's community (like Royce's much later) is not of this earth, but of all earths at once. Truth is the responsibility of every individual inquirer, not for that inquirer's sake, not for that inquirer's community's sake, but for reality's sake itself because, in the long run, there is no distinction to be made between reality's aim and mind's aim, and the aim of every individual is such as it is because it inherits its drive from that over-arching self-realizing purpose.

This volume begins with the first two texts of Peirce's "Illustrations of the Logic of Science" published in the *Popular Science Monthly* in 1878–79. "The Fixation of Belief" and "How to Make our Ideas Clear" (first published in French in 1877–78) present ideas Peirce had already written out much earlier between 1871 and 1873. It was in the fall of 1871 that Peirce founded the Metaphysical Club in Old Cambridge. Over the first two years of its existence (it lasted until the winter of 1874–75), meetings were held fortnightly and attracted such intellectuals as William James, Francis G. Peabody, Oliver Wendell Holmes, Joseph Bangs Warner, Nicholas St. John Green, John Fiske, Chauncey Wright, and Francis E. Abbot: a group of already or soon-to-be eminent philosophers, psychologists, historians, and law scholars. It was during these early meetings that Peirce introduced a new maxim of logic that he proposed to name "pragmatism," a word he would officially commit to paper only three decades or so later, however, after William James had popularized it. The maxim owed something to truth-disrobing lawyer Nicholas St. John Green, whom Peirce considered the grandfather of pragmatism because he would often remind the audience of the practical importance of Alexander Bain's definition of belief as "that upon which a man

is prepared to act" (see beginning of chapter 10). Peirce's logical research had made him more aware than anyone else of how much truth transited in the inner bowels of that definition – so much that pragmatism, would he say thirty-five years later, was "scarce more than a corollary" of it.

That "The Fixation of Belief" is a corollary of it is clear. The history of science is parallel to the history of the art of reasoning, and the latter is a reflection of the inferential habits of an individual or a community. An inferential habit is a well-established method of following particular trains of thought that render known the unknown by shedding over it the light cast by relied-upon information. There are many "guiding principles" that allow us to increase our body of knowledge, and obedience to such principles does not generally require that one be aware of them. In practice, one idea leads to another pretty easily, and the ease of it is often taken automatically as a sign of coherence and logicality that reinforces the credibility of our chain of thought. Rare are the practical situations that suddenly force us to search out not just for a solution, but for a method of finding a solution. Rare as they may be, though, sooner or later everyone of us is faced with circumstances that demand that we either retrace far more consciously a previous train of thought that led us to assert some terrible thought or commit some reprehensible act, or that we exercise our logical imagination to find out what the rules might be that govern an unfamiliar and inescapable situation. When ideas stop flowing easily from one another, or when they appear to have leaked into incompatible or hostile territory, then the time has come to unearth hidden habits of thought, or uncover new and better ones, so that errors may get corrected or avoided. Failure to conduct this logical examination – the formal analysis of the passing from one thought to another – may lead to the scourge of all philosophy: a poor and naïve metaphysics.

There are no purely gratuitous thoughts absolutely unconcerned with experience. Thinking is undetached action: it is as much an activity as is the motion of a hand hurling a hammer onto a nail's head. The fact that thinking is externally less noticeable and makes less noise is unimportant. Josiah Royce insisted vehemently on this: there is no appreciable distinction between intellect and will, for ideas are intentions intent on carrying themselves out. For Peirce, thinking is never disincarnated, even under the logician's scalpel, for a skeleton without ligaments is but a pile of crumbling bones. Asking a question or pronouncing a judgment are consequential affairs, and they are always motivated. Ignorance alone is not a sufficient incentive for questioning; ignorance resulting in frustration or suffering is far more likely to lead to study and inquiry. Knowledge alone is not a sufficient incentive for asserting some matter of fact; knowledge relevant to the handling of a particular situation is far more likely to get expressed and be shared with others with an insistence on its adequacy or trustworthiness. To doubt or to believe, these are two modes of experiencing thinking in our flesh – one is disquieting, the other

assuring. Inquiry is the process through which we pass from one state to the other. The psychological overtone should not mislead us; one should expect logical structures to translate into the sphere of lived experience. The passage from doubt to belief depends indeed on the passage from indeterminacy to determinacy, from manifold to unity, from substance to being: it is the very process of representation fleshed over in brain and blood.

"The Fixation of Belief" examines that passage and classifies the four main strategies that have proven particularly successful in human affairs – four methods of inquiry, or rather, four methods of ending an inquiry so that a conclusion be reached or upheld that allows us to conduct our affairs worriless. Belief does not require that one entertain a true opinion, but that one entertain an opinion as though it was true. The foremost desirable quality in a belief is that it be firm, not that it be true. Three of the four methods of settling opinions aim at strengthening them, at planting them in our minds so that they resist the gales of doubt-induced inquiry, while pretending to do so for the sake of truth.

Very admirable, widespread, and successful is the method of tenacity, whereby individuals cling to the first satisfactory idea that happens to float by, without considering other planks they could hold on to in the troubled sea. People of character, resolute decision-makers who cannot afford the luxury of rethinking, are justly praised for their cold-blooded gambling acts – until something goes wrong. Tenacity forgoes inquiry, not because tenacity is irrational, but because it is arational: it despises reason as a time-wasting obstacle to action, and it thus ends doubt by doubting the value of inquiry. Tenacious beliefs are signs that steadily avoid ampliative interpretants, and so, too, are authoritarian beliefs. Indeed, the second method, just as admirable although morally superior since it surpasses individual interest, is that of authority, or tenacity turned social. Authority gets rid of doubt by forbidding its practice and ruling or rooting out individual inquiry. Its aim is couched in commendable words: peace, security, stability, "law and order." It switches the responsibility of defining beliefs to the body politic or to the church, and demands allegiance by presenting itself as so trustworthy that independent examination becomes unworthy. The third admirable and even more respectable method is the a priori method, or authority turned dogmatic and intellectual. With it, inquiry is not dismissed, but accepted with the requisite that it be confined to speculative conversations within the confines of a bare cell. The conclusions of such increasingly amicable conversations take the form of fundamental propositions whose inner harmony and sense-making power instill in the dialoguers an irresistible inclination not only to believe them and in them, but also to turn them into *ur*-beliefs, self-evident foundations firm enough to erect sophisticated systems of thought, the more detached from experience, the less likely to disappoint. All three methods are effective ways of settling opinions, of limiting, reducing, or banishing the pain of

doubt, and of economizing research. Pragmatist thinkers cannot but appreciate their practicality, and so does Peirce, who is not naïve enough to discount them with a haughty shrug.

Yet, none of those methods has ever yielded long-lasting beliefs; firm beliefs yield strong believers, but oak trees are more easily uprooted than vacillating cattails. Unlike paper doubts, stone doubts don't burn; they resist rhetoric and sophistry because they are not themselves made of words. We stumble upon them, get hurt, and learn that sooth cannot be soothed away. Careful examination of both stone and wound becomes the only recourse and our only resource. Only the scientific method will not shrink from inquiry but revel in it and the demands of its logic. Only the fourth method will acknowledge reality's independence of our opinions and dependence on regular laws, and will grant a hearing to all earnest theories for the sake of finding truth regardless of the cost to personal pride. Only that fourth strategy will free the will from the bonds of arbitrariness by providing criteria distinguishing good from bad reasoning and restoring the wholesome possibility of believing with integrity. For truth alone, when acted on, "will carry us to the point we aim at and not astray," and only the scientific method nurtures enough patience and dispassion to secure those beliefs that are worth acting on because their consequences, far from undermining our humanity, will reaffirm its positive capacity to surmount ignorance and fear and take the risk of broadening knowledge and deepening the hope that accompanies it.

In "How to Make Our Ideas Clear," Peirce continues his logical inquiry into the possibility of genuine understanding. Neither Descartes nor Leibniz managed to provide clear and distinct ideas of either the clear or the distinct, hampered as both were by the method of apriority. Descartes's reliance on introspection as an evidential judge was honest but overconfident as to the actual clearness that could be obtained, while Leibniz's trust in the refinement of analytic definitions was blind to the fact that definitions don't expand knowledge no matter how their distinguos seem to increase distinctness. It is true, however, that, pace Descartes, the first grade of clearness is achieved by one's sheer familiarity with certain ideas, and that the second grade is achieved, pace Leibniz, by accumulating abstract definitions. But none of these two efforts are ampliative, none contributes to learning something new, and so none is concerned with reasoning since reasoning's aim is to make known the unknown. Modern science is ampliative through and through, and cannot be so without striving to make our ideas clear. But the desired clearness is of a different kind, one that at first blush is not a priori but a posteriori, and one that therefore must be of a far higher grade than the first two – if only because it is bound to be far more difficult to achieve, given that the stakes are much higher.

Generalizing the passing from doubt to belief to any process of ampliative inference beginning in the asking of a question (no matter how minute) and

ending in its resolution, Peirce insists that we cannot understand the process of thought without appreciating its fundamental mediatingness. Unlike sensations, which can only be immediately perceived from present moment to present moment, thought is the connective thread that runs through the succession of sensations so that their flow, or ordered transition from past to future, rises mediately to our awareness. Thought is a system of relationships that reveals the peculiar identity not of the sensations themselves but of their flow: it brings about the element of generality that governs or rules their succession. It does so, however, by virtue of its own distinguishing function or purpose, which is that of producing belief. Belief as the end-goal is what distinguishes thinking from any other type of activity. From this standpoint, belief needs to be redefined as "thought at rest," or the particular pause thinking achieves when the element of generality it was in pursuit of has been fully displayed so that there only remains to either contemplate it or obey it with calm and worriless confidence. Belief, therefore, is the instauration of a kind of awareness that replaces the agitation of inquiry with "the establishment in our nature of a rule of action," that is, with a habit.

With this idea, Peirce's pragmatism acquires its footing. The aim of all thinking is to bring the inquiring mind to a resting place where thinking stops so that rule-bound action can take flight. Inevitably, such a flight will generate situations that had been insufficiently thought out, the rules of action will show their limitations, doubt will return, thinking will restart, in an endless ballet. But no matter, the upshot of any thinking is the exercise of the will: some modification will take place in the world, an effect that is not mere thought will come into being and influence the future course of thinking, and thought will thus be truly tested. Production of habits of action is not an accidental but a necessary outcome of thinking: it is an integral part of its logical definition, not a psychological byproduct. This is why Peirce keeps insisting that pragmatism is a maxim of logic, and not an arbitrary body of metaphysical, least of all psychological, principles.[2]

If thought naturally produces habits of action, the latter provide an explanation of the meaning of conceptions. The meaning of a thought is the sphere of its practical influence. As a sphere, it has a general nature; as a source of influence or determination, it is conditional. Such is the nature of habits: they are principles of conduct and action "under such circumstances as might possibly occur," no matter how improbably. Possible circumstances need to be perceived, recognized, weighed, before the adequate habit of action be identified and then applied, since application is the purpose of any thought.

[2] Paul Forster published an important paper demonstrating this: "The Logic of Pragmatism: A Neglected Argument for Peirce's Pragmatic Maxim," *Transactions of the Charles S. Peirce Society* 39 (2003): 525–554.

Habits are anticipations of actual applications, and thus they are concerned with the "conceivably practical." Giving its due to this logical demand embedded in all conceptions then gives rise to Peirce's pragmatic maxim (not named as such in the text), which corresponds to the third grade of clearness. A clear conception of anything requires the expression of its conceivable practical effects – no matter how improbable the actual occurrence of such effects may be (as long as the effects themselves are probable or conceivable without contradiction).

As thought brought to rest, belief is intimately connected to the acquisition of a clear conception. Peirce suggests that for a belief to be true, it must be itself an effect brought about by a real thing. Since that real thing is the object of the belief, the belief must then have been generated by the object itself. But this cannot be ascertained within the belief itself as expressed, but by examining its own sphere of influence, once such a sphere is opened to general scientific investigation. Truth then will be the ultimate conclusion of that investigation, and that conclusion is reached when the investigation has exhausted the list of possible predicates. No individual researcher or finite group of researchers may reach that point, for reality cannot be confined to finite thought. But reality depends on thought in general, it fuels it, and effective partial representations in the short term are mere means toward the intended representational fulfillment. Our partial and fallible beliefs are beliefs to the extent that they partake of the final belief.

Why is "The Law of Mind" included in this collection of writings on pragmatism? The third of five essays published in *The Monist* in the early 1890s, "The Law of Mind" is an essential stepping stone in the development of Peirce's pragmatism, thirteen years or so after the two seminal essays just discussed, and thirteen years or so before "pragmaticism" burst onto the scene. Quite simply, "The Law of Mind" is to Peirce's pragmatism what "The Stream of Thought" is to James's, and we will see that, although it never discusses pragmatism, its main business is actually to make our ideas distinctly clear about the very core of the pragmatic maxim.

By the early 1890s, Peirce's philosophy has matured considerably, spurred by the development of his logic of relatives, the extension of his theory of categories from thought to nature through a careful examination of their interplay within phenomena of psychology, physiology, biology, and physics, the study of probability theory, and the incorporation of a full-blown, sophisticated, evolutionism into his metaphysics. Peirce is now ready to return to his theory of mind and to revisit the question of the concatenation of ideas, this time not merely from a logical standpoint, but, perhaps more demandingly, from a combined psychical and physical perspective informed by the latest mathematical advances.

Peirce's argumentative challenge is to showcase the advantages and demonstrate the necessity of a realistic over a nominalistic account of how ideas affect

one another. A little dose of phenomenological attention suffices to reveal that the highly convenient and useful preconception that ideas are (or can be treated like) discrete entities creates all sorts of explanatory difficulties that only ad-hoc hypotheses invoking occult powers of the soul can patch up. Reducing ideas to individual or separable entities precludes a satisfactory explanation not only of how they bridge from one to the next, but also how they maintain themselves through time. What prevents a once fleetingly conceived idea from vanishing altogether? Ideas hold on in the psychical space-time called consciousness owing to their being, not instantaneous flashes, but lasting events. They are episodes of immediate consciousness embracing infinitesimal intervals of time. Each of these intervals, by definition, is an immediately perceived sequence of three instants – beginning, middle, end – and each continuously merges into immediately subsequent and overlapping intervals: any beginning is the middle of the previous interval and the end of the penultimate one; any middle is the end of the previous interval and the beginning of the next one; any end is the middle of the following interval and the beginning of the subsequent one. Although each interval is immediately perceived, the relations of all parts across a sequence are mediately perceived or inferred. This mediate perception, in representing its object, is spread out objectively over the entire sequence, but subjectively embraced in the last interval or moment. The entire series gets therefore to be present in the awareness that accompanies the "last" moment, i.e., the moment that contains an end not already becoming but about to become the middle of the next interval. Past ideas can therefore be present because they are never wholly past: past and present belong to the same continuum of infinitesimal moments, and the nature of the continuum is such that a past in utter discontinuity with the present would be a contradiction. Ideas seemingly conceived in the present are continuously inherited from the past. This does not imply that the past is wholly in the present, for ideas tend to lose their intensity over time. To the extent that they are present, however, ideas are so partly "vicariously" or representationally, partly immediately.

Peirce's infinitesimalist account of the continuum of ideas is mathematically grounded. Well aware that infinitesimals were no longer in vogue in his time, he argues for their return first by appealing to Cantor's theory of infinite collections and insisting on the distinction between the two principal orders of infinite: the endless and the innumerable (a third kind, the endlessly infinite, is dismissed as pragmatically unmanageable), and second by offering a new conception of the continuum. Based on criticisms of both Cantor's and Kant's views, Peirce's new conception stems from the union of two properties: Kanticity on the one hand, or the infinite divisibility of the continuum (later rephrased in terms of having parts whose own parts are of the same kind, i.e., whose parts are never definite), and Aristotelicity on the other, or the stipulation that a continuum contains the endpoints of all of its endless series, and

thus contains all of its limits. The mathematics of infinites provides Peirce with a pragmatic justification of his recourse to infinitesimals: they improve conceivability, and especially that of a true continuum. The new definition of the continuum, in turn, allows Peirce to avoid all the traditional pitfalls pockmarked by the discreteness of ideas. Intervals of consciousness that mix both the past and the future become then conceivable ("the present is half past and half to come"), and immediate feelings need not be instantaneous: they are spread out.

The flow of time is not reversible, and neither is that of mind. The space-time of consciousness is a one-directional continuum of states or moments of feelings affecting or transitioning immediately into subsequent states or moments of feelings. Every moment is the overlapped patient of the previous moment and the overlapping agent of the next; no moment is ever isolated, and thus none escapes past contagion, wherever it comes from. Time's continuum allows Peirce to surmise that any feeling is part of the continuum of all those feelings that differ infinitesimally from it in intensity, and this accounts for the possibility of changing feelings. Space's continuum allows Peirce to surmise that parts of mind infinitesimally close to one another form a "community of feeling," an essential condition for the coordination both between and within minds. These hypotheses provide Peirce with much better equipment to approach the question of how ideas affect one another and give him the means to make a crucial pragmatic connection back to logic.

Ungeneralized ideas are feelings endowed both with a spreading or affecting energy that decreases as it gets more removed from the present, and with a tendency to carry along other feelings. Innumerable in any finite interval of time, they weld together into *general* ideas, these latter being continua of living feeling some part of which is immediately present. Within these continua, ideas gradually modify and shape themselves into others. The insistency of past ideas rises to infinity the less removed from the present they get. Conversely, one needs to conjecture that ideas not yet born are being *prepared* in the present through *habits*. Bonds between ideas, general connections, are getting established that call for the emergence of new ideas. Thus are future ideas "already affectible and already affected," and the closer they are to the present, the readier they are to emerge by virtue of that preparedness. It is this insight that allows Peirce to reopen the door to logic and to assert that affecting ideas cause the ideas they affect to be attached as "logical predicates" to them as "subjects." Thus each idea is made to *represent* the previous idea to the following idea and is spurred to do so by the flow of representational energy inherited from the past but always at its peak in the present understood as continuous mediation between past and future. Thus do suggestions from the past influence the future through the present: as an object influences an interpretant through a sign. There are three main forms to that influence, corresponding to the three classes of logical inference of deduction, induction,

and hypothesis, each one of which involves a habit by virtue of which future ideas will or would take place on a varying scale of certainty, according as these future ideas are themselves, respectively, reactions, general ideas, or associations.

General ideas imply the death of nominalism: they are living realities "concreted" by associations of feelings, and they pervade and govern mental phenomena. The law of mind is thus that ideas shall influence and be influenced by one another and determine acts in the future. Implied in this is a "developmental teleology" such as is exemplified in the phenomenon of personality.

In concluding "The Law of Mind" and its outline of "synechism," Peirce claims having successfully shown that all sorts of phenomena that used to call for ad-hoc hypotheses can now be demystified satisfactorily, and that a radical logical realism is the condition of that success together with what all that it entails: objective idealism (one that overcomes the traditional rivalry with empirical realism), tychism or the acknowledgment of the irreducible reality of chance (as principle of diversification and life), and evolutionism. Peirce's mature pragmatism will incorporate all of those results. Here, then, is why "The Law of Mind" is included in this volume, despite its being mute about pragmatism. In stating that mind's law is that "ideas tend to spread continuously and to affect certain others" that happen to be affectible, and that in doing so such ideas gain generality and weld with other ideas, Peirce has managed to clarify one central aspect of his pragmatic maxim: how a conception may have effects. The answer is that they do so because they affect other conceptions in a variety of ways, some of which are indeed "reactions," and that such affections need not be postulated with an air of mystery, explainable as they are through a proper mathematical and pertinently metaphysical and logical understanding of both continuity and generality.

After William James, in 1898, publicly acknowledged Peirce as the founder and coiner of pragmatism, Peirce became more concerned about the welfare of the maxim he had fathered twenty-five years earlier. Childless Peirce was not going to abandon his intellectual progeny to the fate of loveless kidnappers. The first printed occurrence of the word "pragmatism" in Peirce's writings appeared on April 20, 1900 in his praise of Clark University on the occasion of its decennial celebration: "in my youth, I wrote some articles to uphold a doctrine I called Pragmatism, namely, that the meaning and essence of every conception lies in the application that is to be made of it.... But the question arises, *what is* the ultimate application; at that time, I seem to have been inclined to subordinate the *conception* to the *act*, knowing to doing. Subsequent experience of life has taught me that the only thing that is really desirable without a reason for being so, is to render ideas and things reasonable.... Logical analysis shows that reasonableness consists in association, assimilation, generalization, the bringing of items together into an

organic whole.... In the emotional sphere, this tendency towards union appears as Love; so that the Law of Love and the Law of Reason are quite at one" (*Science*, n.s., vol. 11, no. 277: 621). The fact that the correction Peirce is here initiating coincides with his first published used of the word "pragmatism" is significant. That correction clearly benefited both from Peirce's personal struggles that began after he resigned from the Coast and Geodetic Survey and from the synechistic turn he took in "The Law of Mind" and sharpened in his Cambridge Conferences Lectures of 1898. Peirce's supplement to the pragmatic maxim would have made Josiah Royce proud, for now Peirce wonders about the ultimate, not merely proximate, application of conceptions, feeling that not taking that question seriously would greatly endanger pragmatism by reducing it to a doctrine that could too easily satisfy nominalistic propensities. Reasonableness itself is proposed as the ultimate practical purpose, a purpose distinguished from any other in that it has no other end than itself. Reasonableness is the ultimate tendency that governs all representational yearnings: the goal is to unify for the sake of unification itself, for what this will produce will coincide with the original object, the source that fuels all representational processes.

The second opportunity to put "pragmatism" into writing arose a few months later, in October 1900, when James Mark Baldwin asked Peirce to provide his own definition of pragmatism for the *Dictionary of Philosophy and Psychology* (it appeared in the second volume in 1902). William James had been solicited as well, and Baldwin coordinated their contributions to the entry, found in the fourth selection in the present volume. Peirce took advantage of this opportunity to clarify two things along the lines of his *Science* article: first, that the spirit of the logical maxim of 1878 was not so much to require that the proof be in the pudding, although that is already of great utility, as to identify the end that the pudding is intended to fulfill: the true interpreter of our thought, or upshot of our conception, is not some practical fact, but the general idea that presides over it. But even this is not quite sufficient: in the second place, we need to acknowledge that beyond the third grade, there is yet a higher, fourth grade, of clearness, whose maxim is that one should consider how the conceivable practical effects contribute to the development of "concrete reasonableness," that is, how effectively they participate in the realization of the higher order from which they derive their meaningfulness. The higher order, however, is not cast in marble, for it "lies in the evolutionary process" itself: reasonableness grows in step with the continuum of generalization and habituation whose process Peirce's synechistic pragmatism describes.

On 26 March 1903, Peirce delivered the first of seven lectures on pragmatism at Harvard, a series made possible thanks to the efforts of William James. For the first time Peirce is given the opportunity to take a public stance and explain his exact position. Pragmatism is no longer a just-

born philosophy but a fast-moving toddler prone to temper tantrums. Many are the thinkers seduced by the youngster's ravishing smile and all want to grab and cuddle it in their arms. Peirce is well aware of the ebullient competition, and aware, too, that no one is paying any attention to him, the founder. This is now his chance, and he is determined not to waste it. He is rightly afraid that none of the kidnappers around him has learned how to care for the child he fathered, principally because none knows the recipe of the only formula that will keep it well fed: logic. It therefore behooves him to describe the formula's ingredients and to teach how to mix them. The task is dull and requires patience, but only those willing to learn it will be fit for childcare. The first lesson is to stop believing that pragmatism is a magical formula similar to the first principles of seminary philosophy: it is merely a maxim of logic, and thus an instrument of right thinking, or, perhaps a little less modestly, a "philosophical theorem," thus not a postulate nor an axiom or self-evident truth, but a general enunciation[3] that lends itself to a diagrammatic demonstration, and thus a proof. This theorem states that the meaning of any synthetic judgment expressed in the indicative lies "in its tendency to enforce a corresponding practical maxim expressible as a conditional sentence having its apodosis in the imperative mood." By recasting the maxim in such a fashion, Peirce emphasizes both its logicality and its metaphysical purport (or the fact of its wide range of application). Buried in it is a principle of pragmatic faith: any fact-related theory can be tested by converting it into a practical precept stating the conditions under which definite action ought to be undertaken because the range of its consequences has been anticipated in the very expression of the theory. The indicative mood of the judgment anchors its purport not merely in what has been actually observed at particular instants, but in the incoming experience extending toward the long run: a statement of fact is one that carries the assurance that future experience will be consistent in its regard, and that the pursuit of our activity shall bear it out. Claiming that a synthetic proposition is true, therefore, amounts to turning it into a maxim of conduct.

Peirce has no doubt about the usefulness of his theorem. Its application provides a method of inquiry that is aimed at the highest level of clearness, and it helps solve all sorts of problems, including intricate ones connected with probabilities. If one wonders what it means for an event to have a certain probability value p, the method requires that one examine the practical difference such a value makes when compared to other values, and one of that method's outcomes is to sharpen our understanding by both broadening

[3] From "New Elements" (1904) in *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, ed. Peirce Edition Project (Bloomington: Indiana University Press, 1998), p. 303.

and deepening our grasp of the concept: for instance, $p = 1$ does not mean that a particular event will certainly occur, but merely that the ratio p of the species of events referred to, to that of their genus, is 1. The significance of this is especially manifest when our method brings us to consider a case in which the genus is infinite, for in such a case it becomes clear that such a ratio does not allow us to conclude anything about the certainty of particular occurrences. The method thus serves to clarify the conception and saves us from attaching too precipitously to it a meaning that misses the mark.

Such usefulness is no guarantee that the pragmatic theorem is actually true: it does not constitute a proper demonstration of it. Peirce is careful to emphasize the need for being scrupulous about it: there are very legitimate reasons to think that the maxim as a rational rule may in fact be inadequate. We may wonder for instance whether the concept of incommensurability has any meaning worth its pragmatic salt since the difference between commensurable and incommensurable is admittedly one that is practically and objectively not consequential. When a difference between conceptions depends merely upon the limits of conventional systems of expression, one cannot earnestly hold it to be practical, for otherwise pragmatism would be "completely volatilized." And yet, if the maxim implies a strong rather than a weak conception of practicality, it would seem that certain distinctions with solid historical pedigree would nevertheless need to be discarded on pragmatic grounds, and this suggests that the maxim may either be wrong or too harsh. Pragmatism thus cannot be taken for granted, and inquiry into its most fundamental assumptions is needed. This is what Peirce sets out to do in the ensuing Harvard lectures, where he has his listeners follow an itinerary leading, through an examination of the three phenomenological categories and the three normative sciences, to an extended scholastic realism essential to a proper understanding of pragmatism's metaphysical reach, or its "instinctive attraction for living facts."[4]

Since there is no room in this volume to include all seven lectures (they have been published in full elsewhere), only the first and the last that frame the series have been selected. By the time Peirce reaches the end of his lectures, he has made it clear that what matters most for pragmatism is what he had been pursuing all his life: to give a proper account of the necessary relation between general and singular. Failing to provide such an account would signal the death of the pragmatic method and its guiding maxim, and imperil logical realism. Such an account must start where the entire philosophical tradition has always started out of good instinct: with perception. Understanding the genealogy of all our conceptions is needed, and there is no

[4] From the second Harvard lecture of 1903 in *The Essential Peirce*, vol. 2, p. 158.

reason not to trust the inferential fact that all conceptions can be traced back to perceptual judgments. This is Peirce's first of three "cotary propositions," or propositions whose acceptance will sharpen the maxim's cutting edge by providing it with solid phaneroscopic grounding. All our ideas are at bottom perceptual because the first premises of all thinking even of the most abstract and critical kind first emerge from uncontrolled perceptual suggestions. The pragmatic maxim itself shares such a genealogy, and the crux of Peirce's argument is to show that the maxim needs to display itself the logic of that genealogy.

Every perceptual judgment fulfills two functions at once. On the one hand it provides testimony about the world of singular percepts, and on the other it does so by expressing these percepts in propositional form. As to the first function, perceptual judgments result from actual reactions of sensed singulars upon the mind; they testify that actual sensory solicitation is taking place and that it emanates from something that can be pointed at via an indexical sign. Perceptual judgments get formed in reaction to these singular solicitations, and such judgment formation takes the form of interpretation. The subject of every perceptual judgment is thus a singular, which, as such, is unique to every perceptual judgment. Each singular percept of a same object over time is part of a collective singular, whether that object be that of some concrete individual or that of a general conception like *dog*, for the latter arises from the experience of the singular collection of all dogs, and Peirce maintains that a class is an individual. Thus every perceptual judgment provides testimony about a singular, and such a singular, or percept, is the element that is acting upon the mind so that the latter reacts by forming a perceptual judgment. In categorial terms, every percept is a second, and as such includes a first, the form that it carries in order to attract attention. The solicited mind perceives that form and can only acknowledge it by providing to itself a representation of that form. This is the second function of perceptual judgments: they represent the form (the logic of which representation and interpretation is what Peirce's foundational text "On a New List of Categories" is all about), and they do so by recognizing its relational character and turning it into a relational predicate or "rhema." Rhemata are predicates ready to be attached to a subject; as relations they are general, and the origin of that generality is nothing mysterious: it is merely the mark of their representational or logical nature, a mark obtained through a process of generalization that is the hallmark of two kinds of ampliative inferences: abduction (especially, because it takes place at a first-intentional level) and induction (to a lesser degree, because it takes place at a second-intentional level).

This leads us to Peirce's second "cotary proposition": perceptual judgments contain general elements. This entails two consequences: one, that universal propositions are deducible from these general elements, and two, that thirdness is directly perceived. The first consequence is significant, because no

perceptual judgment can be a universal proposition since it is the cognitive product of singular reactions, and one needs to be able to account for the possibility of universals. One must see, however, that the general relational elements included in all perceptual judgments have mathematical properties that transcend them – for instance, the relation of subsequence is transitive – and therefore universal propositions regarding such properties can be deduced from them. As to the second consequence, one way of putting it is that inference itself is ultimately given in perception. This is the case not only of its matter (the conceptions processed through inference), but also of its form, whether that of deductive necessity, inductive probability, or abductive expectability. We cannot ascribe these forms to the only property of reasoning not found in the formation of perceptual judgments, namely self-control, because self-control originates nothing: it is merely inhibitory. Therefore these forms emerge directly within our perception of the inference before it has been validated, and this means that inferentiality is perceptual; it is directly suggested. In addition, perceptual judgments are predications of relations, and as the result of interpretations they are themselves propositions that are conclusions of arguments (not deductive, but abductive). Peirce shows that conclusions are the "intended interpretants" or meanings of an argument, and that they are intended by the very gathering or copulation of the premises. The purpose embedded in every argument is to determine the acceptance of the conclusion. Both the rhemata and the premises that embed them contribute to the formation of such conclusions, so that they both carry out the inferential intention as well. Thus every element of a perceptual judgment is purposive, and purpose is categorially a third. If that is the case, then Peirce may claim that "thirdness pours in upon us through every avenue of sense," for the very reason he had begun stating eleven years earlier in "The Law of Mind," that continuity itself is given in perception.

At the core of the perceptual process is abduction, or the operation of forming an explanatory hypothesis. The explanation that is required seeks to make sense of what kind of solicitation a mind is subjected to when it reacts to singulars. Forms need to be recognized, identified, and ascribed so that the "strange intruder" become familiar. Singulars intrude as surprising facts, and abduction's goal is to remove the element of surprise by replacing it with a "habit of positive expectation" that can be trusted. This it does by suggesting "something that may be the case," on the basis perhaps of prior similar experiences that lead to the tentative proposition that some ingredient in the current experience could belong to the same class of ingredients previously encountered, and that, if so, this might actually explain some relevant portion of it. Peirce contends that this abductive process is, formally, exactly what takes place in the formation of a perceptual judgment, the only difference between the regular forming of a hypothesis and that of a perceptual judgment being experiential: where regular abductions are felt to be approximative,

conjectural, and deniable, perceptual ones occur without any critical input or control. They are forced upon us, and we cannot but accept them. But otherwise, there are no formal differences between the two. This is Peirce's "third cotary proposition." Our abductive faculty is merely a magnification of our perceptual faculty, or the generalization of its practice into the less perceptual and thus more shaky realm of our reason.

The logic of abduction is not only at the core of pragmatism, it is the whole of it. There is a powerful reason for it: the maxim spells out precisely what is needed in order to evaluate any hypothesis, no more no less. Any abduced hypothesis, to the extent that it has been abduced and not merely thrown in arbitrarily, thus to the extent that it is an experiential theory, must be verifiable by an experimental inquiry that first deduces from the theory what sorts of facts it predicts, and then conducts series of successive experiments in order to observe and induce to what degree actual phenomena develop that agree with the predictions. Observed agreements provide an approximative idea of how the theory generally tends to agree with the facts. To be admissible, a theory is one whose repeated experimentation will produce in the long run results sharing a certain general predicate, a predicate that, as it emerges from the observation of a sufficient set of successive tests, will become identified as a real regularity that spells out the law of the phenomena's continued succession. A regularity of such a kind, because it expresses a necessary relation between general and singular, expresses what can be anticipated to occur again and legitimizes the kind of positive expectation "that shall not be disappointed." The validity of induction depends upon the assurance that disappointment shall not take place, and upon this assurance pragmatism rests.

The fact that our abductions get inductively verified more often than what the law of probabilities would lead one to expect is for Peirce a result of evolution. We are relatively good at "divining the ways of nature" because our mind, over eons, has developed a familiarity with the thirdnesses of nature, and we may call that familiarity "insight." An insight is a perception of a thirdness that escapes reason's oversight. Peirce says that its nature is that of instinct, and that the latter is the veritable ground of our sense of reasonableness. Instinctive knowledge and perceptual judgments belong to the same class of operations, and they are part of a vast complexus to which logic is to be true and of which the part of mind subject to self-control is "mere blossom." If all our conceptions are at bottom perceptual, it is because their generalization can be traced back to others that were once born in that vast complexus. But conceptions, we have seen, are also purposive since they contribute to the inferential process, and their general purposiveness is that which provides direction to the expression of these conceptions into their practical consequences. Conceptions differ from one another only to the extent that they introduce differences of conduct, and such an introduction,

or expression of practical consequences, is properly called action. The conformity of action to intentions is directly given in perception, just as are the elements of the action itself. This allows Peirce to reformulate the pragmatic logic of abduction in his famous terms: "The elements of every concept enter into logical thought at the gate of perception and make their exit at the gate of purposive action; and whatever cannot show its passports at both those two gates is to be arrested as unauthorized by reason." Thus, for Peirce, "logical energy" emerges abductively from perception into the field of controlled representation, and once it has given rise to conduct-modifying action, that energy is spent and "returns to the uncontrolled and uncriticizable parts of the mind."

Many of the key ideas expounded above are echoed in the seventh chapter, "What Pragmatism Is," written over the summer of 1904, which Peirce opens with a reminder that pragmatism was born in the laboratory, never to take off its white coat. He was painfully aware that the kidnappers of his child had meanwhile become more brazen and had begun to bandy it in literary journals. Though Peirce could still accept or suffer the manner in which a James or a Schiller were promoting pragmatism, he fully understood that a logical conception had no chance of survival the moment it had caught the fancy of inexact writers. He therefore took the only course that could secure safe passage to his maxim through the pirate-infested waters ahead, and that was by changing its name to something ugly enough: pragmaticism. With pragmaticism, Peirce was not merely adding a new -ism to an ever growing collection of philosophical trends that included radical empiricism and humanism. On the contrary, he was removing his original -ism once and for all from that collection, and turning it into an -icism that would, as it were, become the fountainhead of all pragmatisms however conceived. Indeed, Peirce's formulation of his pragmatic maxim was so solidly rooted in the logical analysis of representation in its most general form that it was practically inconceivable that any other form of pragmatism could not be deduced from it with their particular errors, or departures from its logic, brought to light.

Capital to Peirce was the particular advantage that the formula of his pragmaticism was subject to a critical proof. His maxim is not a postulate nor an axiom, but a theorem that, when dressed in a white coat, states that the complete definition of any conception consists in the accurate account of all the conceivable experimental phenomena implied by either its affirmation or its denial. Though such a theorem may seem to announce an extended form of positivism, it is one that rejects all traditional metaphysical gibberish, retains and builds upon all of those beliefs that we have no reason to doubt (especially those of instinctive origin), and carries high the flag of scholastic realism for the reasons stated earlier. Peirce is careful to explain that the meaning of a conception never consists in the results of isolated laboratory

experiments, but in experimental phenomena of a general kind, that is, in regular sequences of events that have become predictable and whose occurrence is sure to take place once certain described conditions are fulfilled. The meaning of a conception takes thus the form of a general conditional proposition that is found to be really operative in nature or in human affairs. Such generals are real, and what they express is a future commitment. Indeed, because the meaning of any proposition lies in a future proposition, the latter must have a form that allows it to be applicable to human conduct and its power of self-control, no matter the situation or the purpose. That form must therefore be one that describes all the conceivable experimental results that may follow a particular course of action implied in the assertion of the initial proposition, for it is the taking into account of such results that is alone likely to modify or affect human conduct. Pragmaticism, from this standpoint, is no mere phenomenalism. As a logical method, it is not interested in observing or describing particular phenomena; it specializes instead in the identification of the "rational purport" or the "purposive bearing" of conceptions.

This focus on the rational purport might give pragmaticism an obsolete air of naïve idealism, but Peirce shows that only a nominalistic mind would be prone to such a misconception. If such a misfit would only apply the pragmatic maxim to the conception of the reality of a general, he would come to see that inquiring thought, general as it is through and through, when controlled by a rational experimental logic, tends to express certain conclusions whose truth does not depend upon any particular individual or collective act of thinking or conducting the inquiry. Inquiry does tend to fix opinions that, in the long run, will resist challenges and counter-experiments, and such opinions will appear to be "destined" in the sense that it was their destiny to emerge, simply because what they represent is real. Now, those ultimate opinions are general, and they are real – and they even may be physically efficient, to the extent that they will suggest and regulate individual courses of action within the set of circumstances or conditions they specify. The rational purport of any concept is such a real general, a general conditional proposition aiming at the future and really influencing human conduct. For pragmaticism, therefore, what comes to matter most is the process of evolution whereby the existent comes more and more to embody the "destined" generals, and the only method that offers any guarantee as far as discovering what those destined generals may be is the scientific method under the guidance of the pragmatic logic of abduction.

There is only a small step from holding that generality is real to holding that continuity is an indispensable element of reality and the essence of thought, representation, mediation, genuine thirdness. The categorial theory, by showing that secondness is prescindible from thirdness, and firstness from secondness, implies that nothing gets actualized through action if it is not a

concretion of some general, that is, if it is not the application of some habit or purposive idea, while action is the realization of certain formal possibilities whose apprehension, selection, and carrying out enables it to fulfill its purpose. Pragmaticism implies a tricategorial or trimodal realism, and thus a rejection of nominalistic individualism of all stripes. Such an implication and rejection has an important methodological consequence as far as defining the pragmaticist's general philosophical attitude is concerned. How does one do philosophy, how does one go about thinking about all the vexed issues of a multi-secular tradition of reasoning? Peirce's answer is that the pragmaticist ought to adopt the attitude of a thorough-going critical common-sensist.

Chapters 8 and 9 in this volume develop the main tenets of Peirce's critical common-sensism. Although chapter 9 ("Issues of Pragmaticism") may be seen as an outgrowth of chapter 8 ("Pragmaticism"), the latter is no draft of the former and offers many insights that complement and clarify the denser developments found in chapter 9. Chapter 9 lists "six distinctive characters" that separate critical common-sensism from Reid's philosophy of common sense, but it would be a mistake to see this list as adding two more to the list of "four distinguishing marks" found in chapter 8, for neither list maps out the other precisely and the plan of discussion differs considerably between the two texts.

Although Peirce states that the doctrine of critical common-sensism is one that he had already defended, along with scholastic realism, in the *Journal of Speculative Philosophy* series of 1868–69, the doctrine's roots, as intimated at the beginning of this introduction, can be traced back to the treatise of metaphysics Peirce composed when he was a young twenty-three year old man, in 1862, a few years before crafting the final form of his "New List" argument. It was then that he had concluded that if one wanted to avoid the philosophical cul-de-sacs created by the exaggerations of dogmatism and criticism, the only viable road left was the middle path of a particular kind of metaphysical fideism, one that vowed to believe neither too little nor too much. If such a methodological conclusion was the result of a subtle analysis of canonical modern philosophy, it came so early in Peirce's development, however, that one cannot but surmise that it was born out of his own philosophical instinct, an instinct bathed in the scientific atmosphere of Harvard as much as nourished by the ethos of the "American scholar." Over the next forty-three year, that instinctive stance would work itself out and drive Peirce to elaborate his anti-cartesianism, his nascent pragmatism, his objective idealism, his tychism, his synechism, his agapism, and his semioticism. By 1905, Peirce was finally ready to recognize this philosophical drive for what it was and to articulate it in the form and under the name of critical common-sensism.

Critical common-sensism is not necessarily equivalent to pragmaticism. All pragmaticists, or wielders of the pragmatic maxim, ought to be critical

common-sensists, but the reverse is not true (it is not to be expected, for instance, that critical common-sensists would conduct imaginary experiments in order to observe how modified representations of beliefs could affect conditional resolutions as to conduct). There are several motivations why pragmaticists would want to adhere to critical common-sensism, besides a desire for consistency, and they may be listed as follows. (1) The only propositions and inferences that are indubitable (besides perceptual judgments) are those that turn out to be acritical in the sense that they never were the result of any sort of controlled inquiry, and thus are not the product of any belief settlement that proceeded from a recoverable doubt. (2) All acritical indubitable beliefs are vague, and this implies that the principle of contradiction does not apply to them precisely because they remain indeterminate for lack of confirming or disconfirming experience: they may very well be considered at once true and false. The belief in the order of nature is such a kind of intrinsically vague belief: any attempt to define it with precision will excite doubt, but there always remains something that escapes doubt, and this is practically shown in the impossibility to think that there is no order in nature. (3) Vagueness is real and irreducible. (4) Instinct is the manner we relate to or are governed by the stock of acritical indubitable beliefs. The stock of these "original" beliefs is pretty much fixed, not absolutely so, but its variations take place so slowly and minutely as to be practically negligible. (5) The advent of reasoning coincides with the gradual development of self-control, which is a gradual "outgrowing of the applicability of instinct." Old beliefs tend to lose their applicability when the world of experience becomes too different from what it once was; beliefs then get overstretched up to a breaking point, lose their indubitability, and become criticizable. (6) Self-control takes place when the need for a new habit needs to be fulfilled, and the acquisition of such a new habit requires inquiry and deliberation. Moral self-control and logical self-control work in similar fashion although the sphere of their influence is distinct. (7) Genuine doubt is neither naïve nor artificial. A critical common-sensist economy of research recognizes that instinct is far more trustworthy than reason so that, once a particular belief has been shown to resist criticism, there is no point pretending not to adopt it. At the same time, any candidate for the position of first premise needs to be thoroughly criticized, analyzed, tested, experimented in imagination, following custom-made methodology, before one would declare it beyond doubt – though only for now. (8) The critical common-sensist is a thorough-going fallibilist, so much so that he keeps criticizing his own method besides those of the regular common-sensists, dogmatists, transcendentalists, and criticists.

The combination of critical common-sensism and a tricategorial scholastic realism yields pragmaticism. From the summer of 1905 to the winter of 1906, Peirce wrote a series of papers all titled "The Basis of Pragmaticism," in which he tried to work out several strategies meant to map out, if not

exactly a proof of his philosophical theorem, at least an itinerary across a landscape suggestive of its truth by means of phaneroscopic descriptions of the categories, considerations about the classification of sciences, and in-depth analyses of esthetics, ethics, and logic, the three normative sciences. A particularly elaborate version of these meanderings is found in chapter 10 in this volume. Since a detailed account of the many technically intricate arguments and sub-arguments found in that text would prevent the present introduction from fulfilling the more modest function of its title, our attention will center upon one portion at the end of it whose discussion Peirce's recasting of the pragmatic maxim at the beginning of chapter 9 calls for: "The entire intellectual purport of any symbol consists in the total of all general modes of rational conduct which, conditionally upon all the possible different circumstances and desires, would ensue upon the acceptance of the symbol." The novelty in this form of the maxim is the replacement of the word "conception" with the word "symbol." This turns out to be a fundamental substitution in the development of Peirce's pragmaticism, for "symbol" is a term vastly more precise than "conception." A symbol is a particular kind of sign, exceedingly powerful in many ways, and one of the principal focuses of Peirce's lifelong study of semiotic logic. If Peirce's pragmatic maxim, as he has consistently hammered throughout his writings, is a logical principle, it must not only be one that logic edicts, but one that breathes the very spirit of logic. It is not only a maxim of logic, but a maxim about logic. Now, logic is, in Peirce's classification of the sciences, the third of the three normative sciences, after esthetics and ethics. A large portion of chapter 10 is devoted to clarifying the notion of normativity and its connection to the dualism manifested by the three normative sciences to the extent that they are the sciences of the conditions of good and bad in their respective fields. Peirce shows that such a dualism finds its origin in the irreducibility of secondness, or in the basic mutually completing relation of action and reaction whereby two terms affect or are affected by one another in such a way that their codependence must be recognized as being real or "surd," i.e., not dependent on any description, but a dual state of things that is neither ignorable nor dicible (except that it could be pointed to). It is natural that such a duality, being prescindible from thirds, would be found within triadic phenomena, and sign relations are no exception. Truth happens to be the great concern of logic because it is a measure of the "conformity of a representamen to its object." It is important to emphasize this duality between a sign and its object: the possessive "its" indicates the essential complementarity between the two, the fact that neither would be what it is if it was not acting on or reacting to the other. The matter of truth would never arise were it not for the fact that the object is not an object until it compels a sign into being, and that the sign becomes a sign as a result of that forceful solicitation. Whether the sign manages to do justice to its object is then the question of its truth, the same

old question that agitates pragmaticism when it inquires about the relation between the singular and the general. That such a question can actually be answered and brought within the compass of thought or of the transformation of signs into further signs, is exactly the hope that the pragmaticist's faith allows one to entertain.

An object that compels a sign into being does so to fulfill a purpose that, at minimum, concerns its own future: it needs to be recognized. Recognition requires that its predicates be separated out and identified, and this is what signs do. Signs "communicate ideas," and these ideas, pace Plato and Aristotle, are those forms that the object, whether external or internal, lets out for a certain sake. Signs transform or adjust these forms so that the latter can be transmitted to other signs, their interpretants, and with each interpretance the form or idea grows (this is the chief part of "the process of the creation of the world," says Peirce). Either this process of semiotic growth has no other aim than its own gratuitous performance, or it has a further aim, and that it does so is pragmaticism's contention. Pragmaticism does not deny, as stated earlier, that the ultimate aim is to achieve reasonableness for its own sake ("the continual increase of the embodiment of the idea-potentiality is the *summum bonum*"), but it reminds us that logic itself advances that signs would not be signs if all they did was to blindly transmit forms or ideas to other symbols, again and again, without ever conveying them "into action or habits of action"; ideas indeed cannot grow if they don't get embodied in something else than symbols, such as the flesh and blood of messy experience.

As a medium of communication, a sign's mission is to substitute itself for its object so unobtrusively that in the course of influencing an interpreting sign in regard to the object, the interpretant would be modified as though it had been directly acted upon by the object although it really was so only indirectly through the sign. The object directly influences the sign, the sign directly influences the interpretant, and as a result the object indirectly influences the interpretant. This indirect influence conveyed by the sign is a process of determination that is subject to friction – the kind of friction that Peirce assimilated to vagueness in chapter 8. In conveying a form from the object, a sign does not act merely as a vehicle or a disease-inoculating mosquito but as a mediating representation that employs various strategies in order to cause its interpretant to be affected by the form while trying to be as faithful as possible to the object's purpose. But signs may easily fail in their mission of determination. Their own forms may misleadingly interfere with that of the object, or they may fail to grasp the correct form, they may represent it incompletely, or they may not find the right kind of interpretant nor an interpretant with the desired competence. As mediums, signs control their interpretants to some extent. The kind of control they exert depends on their own degree of determinacy or indeterminacy, i.e., the degree of the latitude of interpretation that the given semiotic situation allows for. Vague signs are

signs that do not express the object's form sufficiently to allow the interpretant to identify that object – whether this is due to the object's own incapacity to produce telltale forms, or to the sign's own incompetence in carrying them out. General signs are signs that are indeterminate by design so as to solicit the interpretant's own input: the interpretant is empowered to complete the determination as it pleases. Clearly, either kind of latitude affects the interpretational process, and thus affects the achievement of the purpose that motivates the object's influence. What interpretation consists in is therefore an essential question, one that, as Peirce puts it, may either "establish or refute the doctrine of pragmaticism."

These semiotic considerations naturally bring us to the last text by Peirce in this volume, "Pragmatism." This text, which is the third out of five versions of an article Peirce failed to convince the editors of the *Nation* and the *Atlantic Monthly* to publish, was composed in the early spring of 1907. Responding to the surge of international interest in pragmatism as well as to the many controversies raging in philosophical journals, Peirce eagerly rejoins the debate and sets out to explain what pragmatism actually is: not a doctrine of metaphysics with any sort of dogmatic pretensions, but a method of discovering the meanings of "intellectual concepts," whether hard words or abstract concepts, through the scientific method of experimentation that seeks to observe and learn its general lessons from the results it obtains. "Intellectual concepts" are legisigns in Peirce's nomenclature of signs: they are neither mere qualisigns (signs that represent their object by virtue of being qualities of feelings) nor sinsigns (signs that fulfill their function by virtue of being existential facts), but signs that stand for their object by virtue of their being generals, which implies that they contribute to express conditional propositions spelling out how their object *would* act or behave under certain circumstances. (Not all legisigns are symbolical: one kind is iconic and two other kinds are indexical. Whether Peirce would restrict intellectual concepts to the symbolical kind only – therefore to terms, propositions, and arguments – is an open question that shall not be answered here. What matters is that such concepts are the building blocks of arguments concerning objective fact.)

The challenge Peirce gives himself is twofold: one is to redefine once more the pragmatic maxim according to these semiotic terms, and the other is to provide a demonstration of it. Thus he begins by stating what he now calls the *kernel of pragmatism* (he does not use the word "pragmaticism" probably because he wants to persuade his fellow pragmatists that what he is about to tell them touches the very core of their philosophy): "the *total* meaning of the predication of an intellectual concept consists in affirming that, under all conceivable circumstances of a given kind, the subject of the predication would (or would not) behave in a certain way," or again: "the whole meaning of an intellectual predicate is that certain kinds of events would happen, once

in so often, in the course of experience, under certain kinds of existential circumstances." Phrased in such a way, it becomes clear enough that Peirce seeks to give meaning a teleological sense. The kernel of pragmatism seeks to identify the part played by each legisign in formulating the general conditional tendencies according to which particular events that would fall under their description would tend to take place if the kind of circumstances described in the antecedent of the conditional proposition happened to be the case. Would-bes and would-acts are probable tendencies or regularities that inductive generalization concludes to; they are habits that, once ascertained and formulated, allow not only to make predictions, but also to apprehend the continuum that certain events belong to and inherit their meaning from (events that could otherwise be mistakenly seen as isolated and thus hard to explain). If so, Peirce's theory of final causation then appears to be a corollary of the reformulated maxim.

Let us close this introduction with a short presentation of Peirce's semiotic demonstration of the kernel of pragmatism.[5] His demonstration rests upon an analysis of the general structure of a sign relation that distinguishes within it, besides the representamen itself, two kinds of objects (immediate and dynamic), and three kinds of interpretants (emotional, energetic and logical). The dynamic object of the sign can never be directly expressed by the sign (this in accordance with Peirce's argument against intuition), but only alluded to partially, and this pushes the interpretant to expand its investigation so that "collateral observation" of the conditions of the sign's own appearance over various occasions helps further identify its object (though never completely). A sign's dynamic object is an individual thing, event, or rational entity, and no general description can ever capture an individual. As individual or singular as the dynamic object is, the fact that it anchors general predicates is a sufficient condition for allowing something else to become a sign of it, if only because other things share the same predicates. Collateral observation allows an idea, which may be both general and vague in different respects, to be formed about the dynamic object, and such an idea is the immediate object of the sign. It is not the result of an interpretation, but of the accretion of distinct experiences of the sign, the collection of whose manifestations will yield in time a more determinate idea of what the sign stands for. Each manifestation of the sign is accompanied by elements that suggest the kind of collateral observation needed to further expand its reach. Besides standing for objects, signs stand to interpretants: they teach other signs whatever they themselves managed to learn about the object, and urge them to pursue the

[5] Nathan Houser has ably described the major steps of that proof in the second part of his remarkable introduction to *The Essential Peirce*, vol. 2, pp. xxxv–xxxvi.

inquiry. The purpose of every sign is to determine other signs in regard to its object, and such a process of determination is continuous: it is itself of a general conditional nature, a *would-become*, and thus symbolical and inferential. Any particular train of semiosis (the irreducible triadic process among object, sign, and interpretant) is a concrete replication or manifestation of this overarching continuum. This is well shown within the sign process: there are three different kinds of interpretants that a sign generates, depending on whether its relation to the object is iconic, indexical, or symbolical. The first kind of interpretants are immediate or "emotional" (not in a psychological sense, though): they result from the simple and direct apprehension of the sign in its significant appearance (thus as something busy standing for something else) and are signs that merely acknowledge the type of "standing for" they witness; they tend to be "feelings." The second kind of interpretants are dynamic or "energetic": they are acted upon by the sign (at the urging of its object), and thus are reactions that take the form of actual deeds (obeying an order, for instance). The third kind of interpretants is crucial for pragmatism. They are the logical interpretants, those that reshape and develop the thought and direct it to further logical interpretants. They are the engine of the inferential process, and as such are in the "relatively future tense" of the would-be. Not all signs have logical interpretants: only those that are intellectual concepts and thus symbolic legisigns (or, if not symbols, sinsigns that are replicas of, and thus informed by, such legisigns).

Logical interpretants are in the conditional future because, when brought to explain (or interpret) a particular concept, they take hold of its general nature and follow it through its general consequences. Such following through gets expressed by stating that the kind of operation the concept, when predicated of an object, would entail "would be followed by a result of a definite general description." When we want to see how this logical structure manifests itself in actual mental experience, there are not many categories of facts that might correspond to it. Peirce lists them as conceptions, desires, expectations, and habits. None of the first three will do, either because they would beg the question (conceptions), or are not really logical (desires), or not conditional (expectations). This leaves us with habits as the only category of mental fact that embodies, so to speak, the true nature of the logical interpretant. What is a habit? It is "a tendency actually to behave in a similar way under similar circumstances in the future." As tendencies, habits actually influence behavior, or the way actions are conducted to produce modifications in the world of experience. Now, Peirce insists that habits are actually a special kind of logical interpretants, unlike concepts, propositions, or arguments. All the latter can do is bring in new logical interpretants to pursue the train of inference they are contributing to. Habits, on the other hand, do not bring in further logical interpretants. They are final, in both senses of the word. Final in the sense of termination because a habit is the end of the infer-

ential process (even if temporary, since habits are subject to revision): when it functions as a habit, it produces only energetic or dynamic interpretants, that is, action. And final in the sense of teleological because a habit governs the action by informing it with a purpose and thus by giving it a direction that transcends the mere committing of a deed. Peirce may therefore conclude that "the deliberately formed, self-analyzing habit is the living definition" or meaning of a conception, and "the veritable and final logical interpretant." This brings us back to the maxim or kernel of pragmatism: to describe a habit is to express the kind of action that it produces under certain circumstances and for a certain purpose, and this is formally equivalent with Peirce's philosophical theorem. This Q.E.D. concludes Peirce's semiotic demonstration of pragmatism, or, more exactly, pragmaticism.

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Section One

Writings by Charles S. Peirce

THE FIXATION OF BELIEF

Charles S. Peirce. "The Fixation of Belief." *Popular Science Monthly* 12.11 (November 1877): 1–15.

I

Few persons care to study logic, because everybody conceives himself to be proficient enough in the art of reasoning already. But I observe that this satisfaction is limited to one's own ratiocination, and does not extend to that of other men.

We come to the full possession of our power of drawing inferences the last of all our faculties, for it is not so much a natural gift as a long and difficult art. The history of its practice would make a grand subject for a book. The mediaeval schoolmen, following the Romans, made logic the earliest of a boy's studies after grammar, as being very easy. So it was, as they understood it. Its fundamental principle, according to them, was, that all knowledge rests on either authority or reason; but that whatever is deduced by reason depends ultimately on a premise derived from authority. Accordingly, as soon as a boy was perfect in the syllogistic procedure, his intellectual kit of tools was held to be complete.

To Roger Bacon, that remarkable mind who in the middle of the thirteenth century was almost a scientific man, the schoolmen's conception of reasoning appeared only an obstacle to truth. He saw that experience alone teaches anything – a proposition which to us seems easy to understand, because a distinct conception of experience has been handed down to us from former generations; which to him also seemed perfectly clear, because its difficulties had not yet unfolded themselves. Of all kinds of experience, the best, he thought, was interior illumination, which teaches many things about Nature which the external senses could never discover, such as the transubstantiation of bread.

Four centuries later, the more celebrated Bacon, in the first book of his *Novum Organum*, gave his clear account of experience as something which must be open to verification and reëxamination. But, superior as Lord Bacon's conception is to earlier notions, a modern reader who is not in awe of his grandiloquence is chiefly struck by the inadequacy of his view of scientific procedure. That we have only to make some crude experiments, to draw up briefs of the results in certain blank forms, to go through these by rule, checking off everything disproved and setting down the alternatives, and that

thus in a few years physical science would be finished up – what an idea! "He wrote on science like a Lord Chancellor," indeed.

The early scientists, Copernicus, Tycho Brahe, Kepler, Galileo, and Gilbert, had methods more like those of their modern brethren. Kepler undertook to draw a curve through the places of Mars;[1] and his greatest service to science was in impressing on men's minds that this was the thing to be done if they wished to improve astronomy; that they were not to content themselves with inquiring whether one system of epicycles was better than another, but that they were to sit down to the figures and find out what the curve, in truth, was. He accomplished this by his incomparable energy and courage, blundering along in the most inconceivable way (to us), from one irrational hypothesis to another, until, after trying twenty-two of these, he fell, by the mere exhaustion of his invention, upon the orbit which a mind well furnished with the weapons of modern logic would have tried almost at the outset.

In the same way, every work of science great enough to be well remembered for a few generations affords some exemplification of the defective state of the art of reasoning of the time when it was written; and each chief step in science has been a lesson in logic. It was so when Lavoisier and his contemporaries took up the study of chemistry. The old chemist's maxim had been, "*Lege, lege, lege, labora, ora, et relege.*" Lavoisier's method was not to read and pray, not to dream that some long and complicated chemical process would have a certain effect, to put it into practice with dull patience, after its inevitable failure to dream that with some modification it would have another result, and to end by publishing the last dream as a fact: his way was to carry his mind into his laboratory, and to make of his alembics and cucurbits instruments of thought, giving a new conception of reasoning, as something which was to be done with one's eyes open, by manipulating real things instead of words and fancies.

The Darwinian controversy is, in large part, a question of logic. Mr. Darwin proposed to apply the statistical method to biology. The same thing had been done in a widely different branch of science, the theory of gases. Though unable to say what the movements of any particular molecule of gas would be on a certain hypothesis regarding the constitution of this class of bodies, Clausius and Maxwell were yet able, by the application of the doctrine of probabilities, to predict that in the long run such and such a proportion of the molecules would, under given circumstances, acquire such and such velocities; that there would take place, every second, such and such a number of collisions, etc.; and from these propositions were able to deduce certain properties of gases, especially in regard to their heat-relations. In like manner,

[1] Not quite so, but as nearly so as can be told in a few words.

Darwin, while unable to say what the operation of variation and natural selection in any individual case will be, demonstrates that in the long run they will adapt animals to their circumstances. Whether or not existing animal forms are due to such action, or what position the theory ought to take, forms the subject of a discussion in which questions of fact and questions of logic are curiously interlaced.

II

The object of reasoning is to find out, from the consideration of what we already know, something else which we do not know. Consequently, reasoning is good if it be such as to give a true conclusion from true premises, and not otherwise. Thus, the question of its validity is purely one of fact and not of thinking. A being the premises and B the conclusion, the question is, whether these facts are really so related that if A is B is. If so, the inference is valid; if not, not. It is not in the least the question whether, when the premises are accepted by the mind, we feel an impulse to accept the conclusion also. It is true that we do generally reason correctly by nature. But that is an accident; the true conclusion would remain true if we had no impulse to accept it; and the false one would remain false, though we could not resist the tendency to believe in it.

We are, doubtless, in the main logical animals, but we are not perfectly so. Most of us, for example, are naturally more sanguine and hopeful than logic would justify. We seem to be so constituted that in the absence of any facts to go upon we are happy and self-satisfied; so that the effect of experience is continually to contract our hopes and aspirations. Yet a lifetime of the application of this corrective does not usually eradicate our sanguine disposition. Where hope is unchecked by any experience, it is likely that our optimism is extravagant. Logicality in regard to practical matters is the most useful quality an animal can possess, and might, therefore, result from the action of natural selection; but outside of these it is probably of more advantage to the animal to have his mind filled with pleasing and encouraging visions, independently of their truth; and thus, upon unpractical subjects, natural selection might occasion a fallacious tendency of thought.

That which determines us, from given premises, to draw one inference rather than another, is some habit of mind, whether it be constitutional or acquired. The habit is good or otherwise, according as it produces true conclusions from true premises or not; and an inference is regarded as valid or not, without reference to the truth or falsity of its conclusion specially, but according as the habit which determines it is such as to produce true conclusions in general or not. The particular habit of mind which governs this or that inference may be formulated in a proposition whose truth depends on the validity of the inferences which the habit determines; and such a formula

is called a *guiding principle* of inference. Suppose, for example, that we observe that a rotating disk of copper quickly comes to rest when placed between the poles of a magnet, and we infer that this will happen with every disk of copper. The guiding principle is, that what is true of one piece of copper is true of another. Such a guiding principle with regard to copper would be much safer than with regard to many other substances – brass, for example.

A book might be written to signalize all the most important of these guiding principles of reasoning. It would probably be, we must confess, of no service to a person whose thought is directed wholly to practical subjects, and whose activity moves along thoroughly-beaten paths. The problems which present themselves to such a mind are matters of routine which he has learned once for all to handle in learning his business. But let a man venture into an unfamiliar field, or where his results are not continually checked by experience, and all history shows that the most masculine intellect will ofttimes lose his orientation and waste his efforts in directions which bring him no nearer to his goal, or even carry him entirely astray. He is like a ship in the open sea, with no one on board who understands the rules of navigation. And in such a case some general study of the guiding principles of reasoning would be sure to be found useful.

The subject could hardly be treated, however, without being first limited; since almost any fact may serve as a guiding principle. But it so happens that there exists a division among facts, such that in one class are all those which are absolutely essential as guiding principles, while in the others are all which have any other interest as objects of research. This division is between those which are necessarily taken for granted in asking whether a certain conclusion follows from certain premises, and those which are not implied in that question. A moment's thought will show that a variety of facts are already assumed when the logical question is first asked. It is implied, for instance, that there are such states of mind as doubt and belief – that a passage from one to the other is possible, the object of thought remaining the same, and that this transition is subject to some rules which all minds are alike bound by. As these are facts which we must already know before we can have any clear conception of reasoning at all, it cannot be supposed to be any longer of much interest to inquire into their truth or falsity. On the other hand, it is easy to believe that those rules of reasoning which are deduced from the very idea of the process are the ones which are the most essential; and, indeed, that so long as it conforms to these it will, at least, not lead to false conclusions from true premises. In point of fact, the importance of what may be deduced from the assumptions involved in the logical question turns out to be greater than might be supposed, and this for reasons which it is difficult to exhibit at the outset. The only one which I shall here mention is, that conceptions which are really products of logical reflection, without being readily seen to

be so, mingle with our ordinary thoughts, and are frequently the causes of great confusion. This is the case, for example, with the conception of quality. A quality as such is never an object of observation. We can see that a thing is blue or green, but the quality of being blue and the quality of being green are not things which we see; they are products of logical reflection. The truth is, that common-sense, or thought as it first emerges above the level of the narrowly practical, is deeply imbued with that bad logical quality to which the epithet *metaphysical* is commonly applied; and nothing can clear it up but a severe course of logic.

III

We generally know when we wish to ask a question and when we wish to pronounce a judgment, for there is a dissimilarity between the sensation of doubting and that of believing.

But this is not all which distinguishes doubt from belief. There is a practical difference. Our beliefs guide our desires and shape our actions. The Assassins, or followers of the Old Man of the Mountain, used to rush into death at his least command, because they believed that obedience to him would insure everlasting felicity. Had they doubted this, they would not have acted as they did. So it is with every belief, according to its degree. The feeling of believing is a more or less sure indication of there being established in our nature some habit which will determine our actions. Doubt never has such an effect.

Nor must we overlook a third point of difference. Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else.[2] On the contrary, we cling tenaciously, not merely to believing, but to believing just what we do believe.

Thus, both doubt and belief have positive effects upon us, though very different ones. Belief does not make us act at once, but puts us into such a condition that we shall behave in some certain way, when the occasion arises. Doubt has not the least effect of this sort, but stimulates us to action until it is destroyed. This reminds us of the irritation of a nerve and the reflex action produced thereby; while for the analogue of belief, in the nervous system, we must look to what are called nervous associations – for example, to that habit of the nerves in consequence of which the smell of a peach will make the mouth water.

[2] I am not speaking of secondary effects occasionally produced by the interference of other impulses.

IV

The irritation of doubt causes a struggle to attain a state of belief. I shall term this struggle *inquiry*, though it must be admitted that this is sometimes not a very apt designation.

The irritation of doubt is the only immediate motive for the struggle to attain belief. It is certainly best for us that our beliefs should be such as may truly guide our actions so as to satisfy our desires; and this reflection will make us reject any belief which does not seem to have been so formed as to insure this result. But it will only do so by creating a doubt in the place of that belief. With the doubt, therefore, the struggle begins, and with the cessation of doubt it ends. Hence, the sole object of inquiry is the settlement of opinion. We may fancy that this is not enough for us, and that we seek, not merely an opinion, but a true opinion. But put this fancy to the test, and it proves groundless; for as soon as a firm belief is reached we are entirely satisfied, whether the belief be true or false. And it is clear that nothing out of the sphere of our knowledge can be our object, for nothing which does not affect the mind can be the motive for a mental effort. The most that can be maintained is, that we seek for a belief that we shall *think* to be true. But we think each one of our beliefs to be true, and, indeed, it is mere tautology to say so.

That the settlement of opinion is the sole end of inquiry is a very important proposition. It sweeps away, at once, various vague and erroneous conceptions of proof. A few of these may be noticed here.

1. Some philosophers have imagined that to start an inquiry it was only necessary to utter a question or set it down upon paper, and have even recommended us to begin our studies with questioning everything! But the mere putting of a proposition into the interrogative form does not stimulate the mind to any struggle after belief. There must be a real and living doubt, and without this all discussion is idle.

2. It is a very common idea that a demonstration must rest on some ultimate and absolutely indubitable propositions. These, according to one school, are first principles of a general nature; according to another, are first sensations. But, in point of fact, an inquiry, to have that completely satisfactory result called demonstration, has only to start with propositions perfectly free from all actual doubt. If the premises are not in fact doubted at all, they cannot be more satisfactory than they are.

3. Some people seem to love to argue a point after all the world is fully convinced of it. But no further advance can be made. When doubt ceases, mental action on the subject comes to an end; and, if it did go on, it would be without a purpose.

V

If the settlement of opinion is the sole object of inquiry, and if belief is of the nature of a habit, why should we not attain the desired end, by taking any answer to a question which we may fancy, and constantly reiterating it to ourselves, dwelling on all which may conduce to that belief, and learning to turn with contempt and hatred from anything which might disturb it? This simple and direct method is really pursued by many men. I remember once being entreated not to read a certain newspaper lest it might change my opinion upon free-trade. "Lest I might be entrapped by its fallacies and misstatements," was the form of expression. "You are not," my friend said, "a special student of political economy. You might, therefore, easily be deceived by fallacious arguments upon the subject. You might, then, if you read this paper, be led to believe in protection. But you admit that free-trade is the true doctrine; and you do not wish to believe what is not true." I have often known this system to be deliberately adopted. Still oftener, the instinctive dislike of an undecided state of mind, exaggerated into a vague dread of doubt, makes men cling spasmodically to the views they already take. The man feels that, if he only holds to his belief without wavering, it will be entirely satisfactory. Nor can it be denied that a steady and immovable faith yields great peace of mind. It may, indeed, give rise to inconveniences, as if a man should resolutely continue to believe that fire would not burn him, or that he would be eternally damned if he received his *ingesta* otherwise than through a stomach-pump. But then the man who adopts this method will not allow that its inconveniences are greater than its advantages. He will say, "I hold steadfastly to the truth, and the truth is always wholesome." And in many cases it may very well be that the pleasure he derives from his calm faith overbalances any inconveniences resulting from its deceptive character. Thus, if it be true that death is annihilation, then the man who believes that he will certainly go straight to heaven when he dies, provided he have fulfilled certain simple observances in this life, has a cheap pleasure which will not be followed by the least disappointment. A similar consideration seems to have weight with many persons in religious topics, for we frequently hear it said, "Oh, I could not believe so-and-so, because I should be wretched if I did." When an ostrich buries its head in the sand as danger approaches, it very likely takes the happiest course. It hides the danger, and then calmly says there is no danger; and, if it feels perfectly sure there is none, why should it raise its head to see? A man may go through life, systematically keeping out of view all that might cause a change in his opinions, and if he only succeeds – basing his method, as he does, on two fundamental psychological laws – I do not see what can be said against his doing so. It would be an egotistical impertinence to object that his procedure is irrational, for that only amounts to saying that his method of settling belief is not ours. He does not propose to himself to be rational, and, indeed, will often talk with scorn of man's weak and illusive reason. So let him think as he pleases.

But this method of fixing belief, which may be called the method of tenacity, will be unable to hold its ground in practice. The social impulse is against it. The man who adopts it will find that other men think differently from him, and it will be apt to occur to him, in some saner moment, that their opinions are quite as good as his own, and this will shake his confidence in his belief. This conception, that another man's thought or sentiment may be equivalent to one's own, is a distinctly new step, and a highly important one. It arises from an impulse too strong in man to be suppressed, without danger of destroying the human species. Unless we make ourselves hermits, we shall necessarily influence each other's opinions; so that the problem becomes how to fix belief, not in the individual merely, but in the community.

Let the will of the state act, then, instead of that of the individual. Let an institution be created which shall have for its object to keep correct doctrines before the attention of the people, to reiterate them perpetually, and to teach them to the young; having at the same time power to prevent contrary doctrines from being taught, advocated, or expressed. Let all possible causes of a change of mind be removed from men's apprehensions. Let them be kept ignorant, lest they should learn of some reason to think otherwise than they do. Let their passions be enlisted, so that they may regard private and unusual opinions with hatred and horror. Then, let all men who reject the established belief be terrified into silence. Let the people turn out and tar-and-feather such men, or let inquisitions be made into the manner of thinking of suspected persons, and when they are found guilty of forbidden beliefs, let them be subjected to some signal punishment. When complete agreement could not otherwise be reached, a general massacre of all who have not thought in a certain way has proved a very effective means of settling opinion in a country. If the power to do this be wanting, let a list of opinions be drawn up, to which no man of the least independence of thought can assent, and let the faithful be required to accept all these propositions, in order to segregate them as radically as possible from the influence of the rest of the world.

This method has, from the earliest times, been one of the chief means of upholding correct theological and political doctrines, and of preserving their universal or catholic character. In Rome, especially, it has been practised from the days of Numa Pompilius to those of Pius Nonus. This is the most perfect example in history; but wherever there is a priesthood – and no religion has been without one – this method has been more or less made use of. Wherever there is an aristocracy, or a guild, or any association of a class of men whose interests depend or are supposed to depend on certain propositions, there will be inevitably found some traces of this natural product of social feeling. Cruelties always accompany this system; and when it is consistently carried out, they become atrocities of the most horrible kind in the eyes of any rational man. Nor should this occasion surprise, for the officer of a society does not feel justified in surrendering the interests of that society for the sake

of mercy, as he might his own private interests. It is natural, therefore, that sympathy and fellowship should thus produce a most ruthless power.

In judging this method of fixing belief, which may be called the method of authority, we must, in the first place, allow its immeasurable mental and moral superiority to the method of tenacity. Its success is proportionately greater; and, in fact, it has over and over again worked the most majestic results. The mere structures of stone which it has caused to be put together – in Siam, for example, in Egypt, and in Europe – have many of them a sublimity hardly more than rivaled by the greatest works of Nature. And, except the geological epochs, there are no periods of time so vast as those which are measured by some of these organized faiths. If we scrutinize the matter closely, we shall find that there has not been one of their creeds which has remained always the same; yet the change is so slow as to be imperceptible during one person's life, so that individual belief remains sensibly fixed. For the mass of mankind, then, there is perhaps no better method than this. If it is their highest impulse to be intellectual slaves, then slaves they ought to remain.

But no institution can undertake to regulate opinions upon every subject. Only the most important ones can be attended to, and on the rest men's minds must be left to the action of natural causes. This imperfection will be no source of weakness so long as men are in such a state of culture that one opinion does not influence another – that is, so long as they cannot put two and two together. But in the most priestridden states some individuals will be found who are raised above that condition. These men possess a wider sort of social feeling; they see that men in other countries and in other ages have held to very different doctrines from those which they themselves have been brought up to believe; and they cannot help seeing that it is the mere accident of their having been taught as they have, and of their having been surrounded with the manners and associations they have, that has caused them to believe as they do and not far differently. And their candor cannot resist the reflection that there is no reason to rate their own views at a higher value than those of other nations and other centuries; and this gives rise to doubts in their minds.

They will further perceive that such doubts as these must exist in their minds with reference to every belief which seems to be determined by the caprice either of themselves or of those who originated the popular opinions. The willful adherence to a belief, and the arbitrary forcing of it upon others, must, therefore, both be given up, and a new method of settling opinions must be adopted, which shall not only produce an impulse to believe, but shall also decide what proposition it is which is to be believed. Let the action of natural preferences be unimpeded, then, and under their influence let men, conversing together and regarding matters in different lights, gradually develop beliefs in harmony with natural causes. This method resembles that by which

conceptions of art have been brought to maturity. The most perfect example of it is to be found in the history of metaphysical philosophy. Systems of this sort have not usually rested upon any observed facts, at least not in any great degree. They have been chiefly adopted because their fundamental propositions seemed "agreeable to reason." This is an apt expression; it does not mean that which agrees with experience, but that which we find ourselves inclined to believe. Plato, for example, finds it agreeable to reason that the distances of the celestial spheres from one another should be proportional to the different lengths of strings which produce harmonious chords. Many philosophers have been led to their main conclusions by considerations like this; but this is the lowest and least developed form which the method takes, for it is clear that another man might find Kepler's theory, that the celestial spheres are proportional to the inscribed and circumscribed spheres of the different regular solids, more agreeable to *his* reason. But the shock of opinions will soon lead men to rest on preferences of a far more universal nature. Take, for example, the doctrine that man only acts selfishly – that is, from the consideration that acting in one way will afford him more pleasure than acting in another. This rests on no fact in the world, but it has had a wide acceptance as being the only reasonable theory.

This method is far more intellectual and respectable from the point of view of reason than either of the others which we have noticed. But its failure has been the most manifest. It makes of inquiry something similar to the development of taste; but taste, unfortunately, is always more or less a matter of fashion, and accordingly metaphysicians have never come to any fixed agreement, but the pendulum has swung backward and forward between a more material and a more spiritual philosophy, from the earliest times to the latest. And so from this, which has been called the *a priori* method, we are driven, in Lord Bacon's phrase, to a true induction. We have examined into this *a priori* method as something which promised to deliver our opinions from their accidental and capricious element. But development, while it is a process which eliminates the effect of some casual circumstances, only magnifies that of others. This method, therefore, does not differ in a very essential way from that of authority. The government may not have lifted its finger to influence my convictions; I may have been left outwardly quite free to choose, we will say, between monogamy and polygamy, and, appealing to my conscience only, I may have concluded that the latter practice is in itself licentious. But when I come to see that the chief obstacle to the spread of Christianity among a people of as high culture as the Hindoos has been a conviction of the immorality of our way of treating women, I cannot help seeing that, though governments do not interfere, sentiments in their development will be very greatly determined by accidental causes. Now, there are some people, among whom I must suppose that my reader is to be found, who, when they see that any belief of theirs is determined by any circumstance

extraneous to the facts, will from that moment not merely admit in words that that belief is doubtful, but will experience a real doubt of it, so that it ceases to be a belief.

To satisfy our doubts, therefore, it is necessary that a method should be found by which our beliefs may be caused by nothing human, but by some external permanency – by something upon which our thinking has no effect. Some mystics imagine that they have such a method in a private inspiration from on high. But that is only a form of the method of tenacity, in which the conception of truth as something public is not yet developed. Our external permanency would not be external, in our sense, if it was restricted in its influence to one individual. It must be something which affects, or might affect, every man. And, though these affections are necessarily as various as are individual conditions, yet the method must be such that the ultimate conclusion of every man shall be the same. Such is the method of science. Its fundamental hypothesis, restated in more familiar language, is this: There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and, though our sensations are as different as are our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion. The new conception here involved is that of reality. It may be asked how I know that there are any realities. If this hypothesis is the sole support of my method of inquiry, my method of inquiry must not be used to support my hypothesis. The reply is this: 1. If investigation cannot be regarded as proving that there are real things, it at least does not lead to a contrary conclusion; but the method and the conception on which it is based remain ever in harmony. No doubts of the method, therefore, necessarily arise from its practice, as is the case with all the others. 2. The feeling which gives rise to any method of fixing belief is a dissatisfaction at two repugnant propositions. But here already is a vague concession that there is some *one* thing to which a proposition should conform. Nobody, therefore, can really doubt that there are realities, or, if he did, doubt would not be a source of dissatisfaction. The hypothesis, therefore, is one which every mind admits. So that the social impulse does not cause me to doubt it. 3. Everybody uses the scientific method about a great many things, and only ceases to use it when he does not know how to apply it. 4. Experience of the method has not led me to doubt it, but, on the contrary, scientific investigation has had the most wonderful triumphs in the way of settling opinion. These afford the explanation of my not doubting the method or the hypothesis which it supposes; and not having any doubt, nor believing that anybody else whom I could influence has, it would be the merest babble for me to say more about it. If there be anybody with a living doubt upon the subject, let him consider it.

To describe the method of scientific investigation is the object of this series of papers. At present I have only room to notice some points of contrast between it and other methods of fixing belief.

This is the only one of the four methods which presents any distinction of a right and a wrong way. If I adopt the method of tenacity and shut myself out from all influences, whatever I think necessary to doing this is necessary according to that method. So with the method of authority: the state may try to put down heresy by means which, from a scientific point of view, seem very ill-calculated to accomplish its purposes; but the only test *on that method* is what the state thinks, so that it cannot pursue the method wrongly. So with the *a priori* method. The very essence of it is to think as one is inclined to think. All metaphysicians will be sure to do that, however they may be inclined to judge each other to be perversely wrong. The Hegelian system recognizes every natural tendency of thought as logical, although it be certain to be abolished by counter-tendencies. Hegel thinks there is a regular system in the succession of these tendencies, in consequence of which, after drifting one way and the other for a long time, opinion will at last go right. And it is true that metaphysicians get the right ideas at last; Hegel's system of Nature represents tolerably the science of that day; and one may be sure that whatever scientific investigation has put out of doubt will presently receive *a priori* demonstration on the part of the metaphysicians. But with the scientific method the case is different. I may start with known and observed facts to proceed to the unknown; and yet the rules which I follow in doing so may not be such as investigation would approve. The test of whether I am truly following the method is not an immediate appeal to my feelings and purposes, but, on the contrary, itself involves the application of the method. Hence it is that bad reasoning as well as good reasoning is possible; and this fact is the foundation of the practical side of logic.

It is not to be supposed that the first three methods of settling opinion present no advantage whatever over the scientific method. On the contrary, each has some peculiar convenience of its own. The *a priori* method is distinguished for its comfortable conclusions. It is the nature of the process to adopt whatever belief we are inclined to, and there are certain flatteries to the vanity of man which we all believe by nature, until we are awakened from our pleasing dream by rough facts. The method of authority will always govern the mass of mankind; and those who wield the various forms of organized force in the state will never be convinced that dangerous reasoning ought not to be suppressed in some way. If liberty of speech is to be untrammeled from the grosser forms of constraint, then uniformity of opinion will be secured by a moral terrorism to which the respectability of society will give its thorough approval. Following the method of authority is the path of peace. Certain non-conformities are permitted; certain others (considered unsafe) are forbidden. These are different in different countries and in different

ages; but, wherever you are, let it be known that you seriously hold a tabooed belief, and you may be perfectly sure of being treated with a cruelty less brutal but more refined than hunting you like a wolf. Thus, the greatest intellectual benefactors of mankind have never dared, and dare not now, to utter the whole of their thought; and thus a shade of *prima facie* doubt is cast upon every proposition which is considered essential to the security of society. Singularly enough, the persecution does not all come from without; but a man torments himself and is oftentimes most distressed at finding himself believing propositions which he has been brought up to regard with aversion. The peaceful and sympathetic man will, therefore, find it hard to resist the temptation to submit his opinions to authority. But most of all I admire the method of tenacity for its strength, simplicity, and directness. Men who pursue it are distinguished for their decision of character, which becomes very easy with such a mental rule. They do not waste time in trying to make up their minds what they want, but, fastening like lightning upon whatever alternative comes first, they hold to it to the end, whatever happens, without an instant's irresolution. This is one of the splendid qualities which generally accompany brilliant, unlasting success. It is impossible not to envy the man who can dismiss reason, although we know how it must turn out at last.

Such are the advantages which the other methods of settling opinion have over scientific investigation. A man should consider well of them; and then he should consider that, after all, he wishes his opinions to coincide with the fact, and that there is no reason why the results of those three methods should do so. To bring about this effect is the prerogative of the method of science. Upon such considerations he has to make his choice – a choice which is far more than the adoption of any intellectual opinion, which is one of the ruling decisions of his life, to which, when once made, he is bound to adhere. The force of habit will sometimes cause a man to hold on to old beliefs, after he is in a condition to see that they have no sound basis. But reflection upon the state of the case will overcome these habits, and he ought to allow reflection its full weight. People sometimes shrink from doing this, having an idea that beliefs are wholesome which they cannot help feeling rest on nothing. But let such persons suppose an analogous though different case from their own. Let them ask themselves what they would say to a reformed Mussulman who should hesitate to give up his old notions in regard to the relations of the sexes; or to a reformed Catholic who should still shrink from reading the Bible. Would they not say that these persons ought to consider the matter fully, and clearly understand the new doctrine, and then ought to embrace it, in its entirety? But, above all, let it be considered that what is more wholesome than any particular belief is integrity of belief, and that to avoid looking into the support of any belief from a fear that it may turn out rotten is quite as immoral as it is disadvantageous. The person who confesses that there is such a thing as truth, which is distinguished from falsehood simply

by this, that if acted on it will carry us to the point we aim at and not astray, and then, though convinced of this, dares not know the truth and seeks to avoid it, is in a sorry state of mind indeed.

Yes, the other methods do have their merits: a clear logical conscience does cost something – just as any virtue, just as all that we cherish, costs us dear. But we should not desire it to be otherwise. The genius of a man's logical method should be loved and reverenced as his bride, whom he has chosen from all the world. He need not contemn the others; on the contrary, he may honor them deeply, and in doing so he only honors her the more. But she is the one that he has chosen, and he knows that he was right in making that choice. And having made it, he will work and fight for her, and will not complain that there are blows to take, hoping that there may be as many and as hard to give, and will strive to be the worthy knight and champion of her from the blaze of whose splendors he draws his inspiration and his courage.

HOW TO MAKE OUR IDEAS CLEAR

Charles S. Peirce. "How to Make Our Ideas Clear." *Popular Science Monthly* 12.1 (January 1878): 286–302.

I

Whoever has looked into a modern treatise on logic of the common sort, will doubtless remember the two distinctions between *clear* and *obscure* conceptions, and between *distinct* and *confused* conceptions. They have lain in the books now for nigh two centuries, unimproved and unmodified, and are generally reckoned by logicians as among the gems of their doctrine.

A clear idea is defined as one which is so apprehended that it will be recognized wherever it is met with, and so that no other will be mistaken for it. If it fails of this clearness, it is said to be obscure.

This is rather a neat bit of philosophical terminology; yet, since it is clearness that they were defining, I wish the logicians had made their definition a little more plain. Never to fail to recognize an idea, and under no circumstances to mistake another for it, let it come in how recondite a form it may, would indeed imply such prodigious force and clearness of intellect as is seldom met with in this world. On the other hand, merely to have such an acquaintance with the idea as to have become familiar with it, and to have lost all hesitancy in recognizing it in ordinary cases, hardly seems to deserve the name of clearness of apprehension, since after all it only amounts to a subjective feeling of mastery which may be entirely mistaken. I take it, however, that when the logicians speak of "clearness," they mean nothing more than such a familiarity with an idea, since they regard the quality as but a small merit, which needs to be supplemented by another, which they call *distinctness*.

A distinct idea is defined as one which contains nothing which is not clear. This is technical language; by the *contents* of an idea logicians understand whatever is contained in its definition. So that an idea is *distinctly* apprehended, according to them, when we can give a precise definition of it, in abstract terms. Here the professional logicians leave the subject; and I would not have troubled the reader with what they have to say, if it were not such a striking example of how they have been slumbering through ages of intellectual activity, listlessly disregarding the enginery of modern thought, and never dreaming of applying its lessons to the improvement of logic. It is easy to show that the doctrine that familiar use and abstract distinctness make the perfection of apprehension has its only true place in philosophies which have

long been extinct; and it is now time to formulate the method of attaining to a more perfect clearness of thought, such as we see and admire in the thinkers of our own time.

When Descartes set about the reconstruction of philosophy, his first step was to (theoretically) permit skepticism and to discard the practice of the schoolmen of looking to authority as the ultimate source of truth. That done, he sought a more natural fountain of true principles, and professed to find it in the human mind; thus passing, in the directest way, from the method of authority to that of apriority, as described in my first paper. Self-consciousness was to furnish us with our fundamental truths, and to decide what was agreeable to reason. But since, evidently, not all ideas are true, he was led to note, as the first condition of infallibility, that they must be clear. The distinction between an idea *seeming* clear and really being so, never occurred to him. Trusting to introspection, as he did, even for a knowledge of external things, why should he question its testimony in respect to the contents of our own minds? But then, I suppose, seeing men, who seemed to be quite clear and positive, holding opposite opinions upon fundamental principles, he was further led to say that clearness of ideas is not sufficient, but that they need also to be distinct, i.e., to have nothing unclear about them. What he probably meant by this (for he did not explain himself with precision) was, that they must sustain the test of dialectical examination; that they must not only seem clear at the outset, but that discussion must never be able to bring to light points of obscurity connected with them.

Such was the distinction of Descartes, and one sees that it was precisely on the level of his philosophy. It was somewhat developed by Leibnitz. This great and singular genius was as remarkable for what he failed to see as for what he saw. That a piece of mechanism could not do work perpetually without being fed with power in some form, was a thing perfectly apparent to him; yet he did not understand that the machinery of the mind can only transform knowledge, but never originate it, unless it be fed with facts of observation. He thus missed the most essential point of the Cartesian philosophy, which is, that to accept propositions which seem perfectly evident to us is a thing which, whether it be logical or illogical, we cannot help doing. Instead of regarding the matter in this way, he sought to reduce the first principles of science to formulas which cannot be denied without self-contradiction, and was apparently unaware of the great difference between his position and that of Descartes. So he reverted to the old formalities of logic, and, above all, abstract definitions played a great part in his philosophy. It was quite natural, therefore, that on observing that the method of Descartes labored under the difficulty that we may seem to ourselves to have clear apprehensions of ideas which in truth are very hazy, no better remedy occurred to him than to require an abstract definition of every important term. Accordingly, in adopting the distinction of *clear* and *distinct* notions, he described the latter

quality as the clear apprehension of everything contained in the definition; and the books have ever since copied his words. There is no danger that his chimerical scheme will ever again be over-valued. Nothing new can ever be learned by analyzing definitions. Nevertheless, our existing beliefs can be set in order by this process, and order is an essential element of intellectual economy, as of every other. It may be acknowledged, therefore, that the books are right in making familiarity with a notion the first step toward clearness of apprehension, and the defining of it the second. But in omitting all mention of any higher perspicuity of thought, they simply mirror a philosophy which was exploded a hundred years ago. That much-admired "ornament of logic" – the doctrine of clearness and distinctness – may be pretty enough, but it is high time to relegate to our cabinet of curiosities the antique *bijou*, and to wear about us something better adapted to modern uses.

The very first lesson that we have a right to demand that logic shall teach us is, how to make our ideas clear; and a most important one it is, depreciated only by minds who stand in need of it. To know what we think, to be masters of our own meaning, will make a solid foundation for great and weighty thought. It is most easily learned by those whose ideas are meagre and restricted; and far happier they than such as wallow helplessly in a rich mud of conceptions. A nation, it is true, may, in the course of generations, overcome the disadvantage of an excessive wealth of language and its natural concomitant, a vast, unfathomable deep of ideas. We may see it in history, slowly perfecting its literary forms, sloughing at length its metaphysics, and, by virtue of the untirable patience which is often a compensation, attaining great excellence in every branch of mental acquirement. The page of history is not yet unrolled which is to tell us whether such a people will or will not in the long-run prevail over one whose ideas (like the words of their language) are few, but which possesses a wonderful mastery over those which it has. For an individual, however, there can be no question that a few clear ideas are worth more than many confused ones. A young man would hardly be persuaded to sacrifice the greater part of his thoughts to save the rest; and the muddled head is the least apt to see the necessity of such a sacrifice. Him we can usually only commiserate, as a person with a congenital defect. Time will help him, but intellectual maturity with regard to clearness comes rather late, an unfortunate arrangement of Nature, inasmuch as clearness is of less use to a man settled in life, whose errors have in great measure had their effect, than it would be to one whose path lies before him. It is terrible to see how a single unclear idea, a single formula without meaning, lurking in a young man's head, will sometimes act like an obstruction of inert matter in an artery, hindering the nutrition of the brain, and condemning its victim to pine away in the fullness of his intellectual vigor and in the midst of intellectual plenty. Many a man has cherished for years as his hobby some vague shadow of an idea, too meaningless to be positively false; he has, nevertheless, passion-

ately loved it, has made it his companion by day and by night, and has given to it his strength and his life, leaving all other occupations for its sake, and in short has lived with it and for it, until it has become, as it were, flesh of his flesh and bone of his bone; and then he has waked up some bright morning to find it gone, clean vanished away like the beautiful Melusina of the fable, and the essence of his life gone with it. I have myself known such a man; and who can tell how many histories of circle-squarers, metaphysicians, astrologers, and what not, may not be told in the old German story?

II

The principles set forth in the first part of these papers lead, at once, to a method of reaching a clearness of thought of a far higher grade than the "distinctness" of the logicians. We have there found that the action of thought is excited by the irritation of doubt, and ceases when belief is attained; so that the production of belief is the sole function of thought. All these words, however, are too strong for my purpose. It is as if I had described the phenomena as they appear under a mental microscope. Doubt and Belief, as the words are commonly employed, relate to religious or other grave discussions. But here I use them to designate the starting of any question, no matter how small or how great, and the resolution of it. If, for instance, in a horse-car, I pull out my purse and find a five-cent nickel and five coppers, I decide, while my hand is going to the purse, in which way I will pay my fare. To call such a question Doubt, and my decision Belief, is certainly to use words very disproportionate to the occasion. To speak of such a doubt as causing an irritation which needs to be appeased, suggests a temper which is uncomfortable to the verge of insanity. Yet, looking at the matter minutely, it must be admitted that, if there is the least hesitation as to whether I shall pay the five coppers or the nickel (as there will be sure to be, unless I act from some previously contracted habit in the matter), though irritation is too strong a word, yet I am excited to such small mental activity as may be necessary to deciding how I shall act. Most frequently doubts arise from some indecision, however momentary, in our action. Sometimes it is not so. I have, for example, to wait in a railway-station, and to pass the time I read the advertisements on the walls, I compare the advantages of different trains and different routes which I never expect to take, merely fancying myself to be in a state of hesitancy, because I am bored with having nothing to trouble me. Feigned hesitancy, whether feigned for mere amusement or with a lofty purpose, plays a great part in the production of scientific inquiry. However the doubt may originate, it stimulates the mind to an activity which may be slight or energetic, calm or turbulent. Images pass rapidly through consciousness, one incessantly melting into another, until at last, when all is over – it may be in a fraction of a second, in an hour, or after long years –

we find ourselves decided as to how we should act under such circumstances as those which occasioned our hesitation. In other words, we have attained belief.

In this process we observe two sorts of elements of consciousness, the distinction between which may best be made clear by means of an illustration. In a piece of music there are the separate notes, and there is the air. A single tone may be prolonged for an hour or a day, and it exists as perfectly in each second of that time as in the whole taken together; so that, as long as it is sounding, it might be present to a sense from which everything in the past was as completely absent as the future itself. But it is different with the air, the performance of which occupies a certain time, during the portions of which only portions of it are played. It consists in an orderliness in the succession of sounds which strike the ear at different times; and to perceive it there must be some continuity of consciousness which makes the events of a lapse of time present to us. We certainly only perceive the air by hearing the separate notes; yet we cannot be said to directly hear it, for we hear only what is present at the instant, and an orderliness of succession cannot exist in an instant. These two sorts of objects, what we are *immediately* conscious of and what we are *mediately* conscious of, are found in all consciousness. Some elements (the sensations) are completely present at every instant so long as they last, while others (like thought) are actions having beginning, middle, and end, and consist in a congruence in the succession of sensations which flow through the mind. They cannot be immediately present to us, but must cover some portion of the past or future. Thought is a thread of melody running through the succession of our sensations.

We may add that just as a piece of music may be written in parts, each part having its own air, so various systems of relationship of succession subsist together between the same sensations. These different systems are distinguished by having different motives, ideas, or functions. Thought is only one such system, for its sole motive, idea, and function is to produce belief, and whatever does not concern that purpose belongs to some other system of relations. The action of thinking may incidentally have other results; it may serve to amuse us, for example, and among *dilettanti* it is not rare to find those who have so perverted thought to the purposes of pleasure that it seems to vex them to think that the questions upon which they delight to exercise it may ever get finally settled; and a positive discovery which takes a favorite subject out of the arena of literary debate is met with ill-concealed dislike. This disposition is the very debauchery of thought. But the soul and meaning of thought, abstracted from the other elements which accompany it, though it may be voluntarily thwarted, can never be made to direct itself toward anything but the production of belief. Thought in action has for its only possible motive the attainment of thought at rest; and whatever does not refer to belief is no part of the thought itself.

And what, then, is belief? It is the demi-cadence which closes a musical phrase in the symphony of our intellectual life. We have seen that it has just three properties: First, it is something that we are aware of; second, it appeases the irritation of doubt; and, third, it involves the establishment in our nature of a rule of action, or, say for short, a *habit*. As it appeases the irritation of doubt, which is the motive for thinking, thought relaxes, and comes to rest for a moment when belief is reached. But, since belief is a rule for action, the application of which involves further doubt and further thought, at the same time that it is a stopping-place, it is also a new starting-place for thought. That is why I have permitted myself to call it thought at rest, although thought is essentially an action. The *final* upshot of thinking is the exercise of volition, and of this thought no longer forms a part; but belief is only a stadium of mental action, an effect upon our nature due to thought, which will influence future thinking.

The essence of belief is the establishment of a habit; and different beliefs are distinguished by the different modes of action to which they give rise. If beliefs do not differ in this respect, if they appease the same doubt by producing the same rule of action, then no mere differences in the manner of consciousness of them can make them different beliefs, any more than playing a tune in different keys is playing different tunes. Imaginary distinctions are often drawn between beliefs which differ only in their mode of expression; – the wrangling which ensues is real enough, however. To believe that any objects are arranged as in Fig. 1, and to believe that they are arranged as in Fig. 2, are one and the same belief; yet it is conceivable that a man should assert one proposition and deny the other. Such false distinctions do as much harm as the confusion of beliefs really different, and are among the pitfalls of which we ought constantly to beware, especially when we are upon metaphysical ground. One singular deception of this sort, which often occurs, is to mistake the sensation produced by our own unclearness of thought for a character

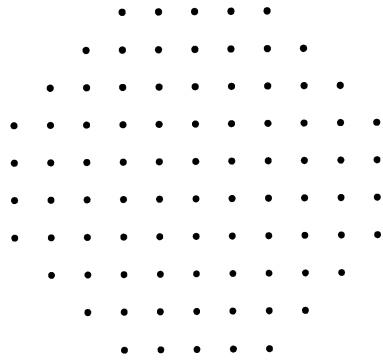

Figure 1

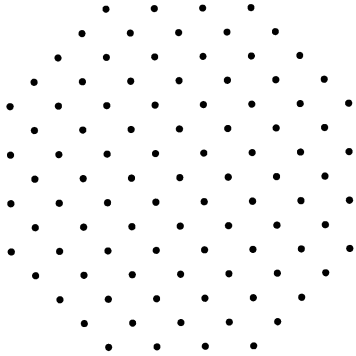

Figure 2

of the object we are thinking. Instead of perceiving that the obscurity is purely subjective, we fancy that we contemplate a quality of the object which is essentially mysterious; and if our conception be afterward presented to us in a clear form we do not recognize it as the same, owing to the absence of the feeling of unintelligibility. So long as this deception lasts, it obviously puts an impassable barrier in the way of perspicuous thinking; so that it equally interests the opponents of rational thought to perpetuate it, and its adherents to guard against it.

Another such deception is to mistake a mere difference in the grammatical construction of two words for a distinction between the ideas they express. In this pedantic age, when the general mob of writers attend so much more to words than to things, this error is common enough. When I just said that thought is an *action*, and that it consists in a *relation*, although a person performs an action but not a relation, which can only be the result of an action, yet there was no inconsistency in what I said, but only a grammatical vagueness.

From all these sophisms we shall be perfectly safe so long as we reflect that the whole function of thought is to produce habits of action; and that whatever there is connected with a thought, but irrelevant to its purpose, is an accretion to it, but no part of it. If there be a unity among our sensations which has no reference to how we shall act on a given occasion, as when we listen to a piece of music, why we do not call that thinking. To develop its meaning, we have, therefore, simply to determine what habits it produces, for what a thing means is simply what habits it involves. Now, the identity of a habit depends on how it might lead us to act, not merely under such circumstances as are likely to arise, but under such as might possibly occur, no matter how improbable they may be. What the habit is depends on *when* and *how* it causes us to act. As for the *when*, every

stimulus to action is derived from perception; as for the *how*, every purpose of action is to produce some sensible result. Thus, we come down to what is tangible and practical, as the root of every real distinction of thought, no matter how subtile it may be; and there is no distinction of meaning so fine as to consist in anything but a possible difference of practice.

To see what this principle leads to, consider in the light of it such a doctrine as that of transubstantiation. The Protestant churches generally hold that the elements of the sacrament are flesh and blood only in a tropical sense; they nourish our souls as meat and the juice of it would our bodies. But the Catholics maintain that they are literally just that; although they possess all the sensible qualities of wafer-cakes and diluted wine. But we can have no conception of wine except what may enter into a belief, either –

1. That this, that, or the other, is wine; or,
2. That wine possesses certain properties.

Such beliefs are nothing but self-notifications that we should, upon occasion, act in regard to such things as we believe to be wine according to the qualities which we believe wine to possess. The occasion of such action would be some sensible perception, the motive of it to produce some sensible result. Thus our action has exclusive reference to what affects the senses, our habit has the same bearing as our action, our belief the same as our habit, our conception the same as our belief; and we can consequently mean nothing by wine but what has certain effects, direct or indirect, upon our senses; and to talk of something as having all the sensible characters of wine, yet being in reality blood, is senseless jargon. Now, it is not my object to pursue the theological question; and having used it as a logical example I drop it, without caring to anticipate the theologian's reply. I only desire to point out how impossible it is that we should have an idea in our minds which relates to anything but conceived sensible effects of things. Our idea of anything *is* our idea of its sensible effects; and if we fancy that we have any other we deceive ourselves, and mistake a mere sensation accompanying the thought for a part of the thought itself. It is absurd to say that thought has any meaning unrelated to its only function. It is foolish for Catholics and Protestants to fancy themselves in disagreement about the elements of the sacrament, if they agree in regard to all their sensible effects, here or hereafter.

It appears, then, that the rule for attaining the third grade of clearness of apprehension is as follows: Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.

III

Let us illustrate this rule by some examples; and, to begin with the simplest one possible, let us ask what we mean by calling a thing *hard*. Evidently that it will not be scratched by many other substances. The whole conception of this quality, as of every other, lies in its conceived effects. There is absolutely no difference between a hard thing and a soft thing so long as they are not brought to the test. Suppose, then, that a diamond could be crystallized in the midst of a cushion of soft cotton, and should remain there until it was finally burned up. Would it be false to say that that diamond was soft? This seems a foolish question, and would be so, in fact, except in the realm of logic. There such questions are often of the greatest utility as serving to bring logical principles into sharper relief than real discussions ever could. In studying logic we must not put them aside with hasty answers, but must consider them with attentive care, in order to make out the principles involved. We may, in the present case, modify our question, and ask what prevents us from saying that all hard bodies remain perfectly soft until they are touched, when their hardness increases with the pressure until they are scratched. Reflection will show that the reply is this: there would be no *falsity* in such modes of speech. They would involve a modification of our present usage of speech with regard to the words hard and soft, but not of their meanings. For they represent no fact to be different from what it is; only they involve arrangements of facts which would be exceedingly maladroit. This leads us to remark that the question of what would occur under circumstances which do not actually arise is not a question of fact, but only of the most perspicuous arrangement of them. For example, the question of free-will and fate in its simplest form, stripped of verbiage, is something like this: I have done something of which I am ashamed; could I, by an effort of the will, have resisted the temptation, and done otherwise? The philosophical reply is, that this is not a question of fact, but only of the arrangement of facts. Arranging them so as to exhibit what is particularly pertinent to my question – namely, that I ought to blame myself for having done wrong – it is perfectly true to say that, if I had willed to do otherwise than I did, I should have done otherwise. On the other hand, arranging the facts so as to exhibit another important consideration, it is equally true that, when a temptation has once been allowed to work, it will, if it has a certain force, produce its effect, let me struggle how I may. There is no objection to a contradiction in what would result from a false supposition. The *reductio ad absurdum* consists in showing that contradictory results would follow from a hypothesis which is consequently judged to be false. Many questions are involved in the free-will discussion, and I am far from desiring to say that both sides are equally right. On the contrary, I am of opinion that one side denies important facts, and that the other does not. But what I do say is, that the above single question was the origin of the whole

doubt; that, had it not been for this question, the controversy would never have arisen; and that this question is perfectly solved in the manner which I have indicated.

Let us next seek a clear idea of Weight. This is another very easy case. To say that a body is heavy means simply that, in the absence of opposing force, it will fall. This (neglecting certain specifications of how it will fall, etc., which exist in the mind of the physicist who uses the word) is evidently the whole conception of weight. It is a fair question whether some particular facts may not *account* for gravity; but what we mean by the force itself is completely involved in its effects.

This leads us to undertake an account of the idea of Force in general. This is the great conception which, developed in the early part of the seventeenth century from the rude idea of a cause, and constantly improved upon since, has shown us how to explain all the changes of motion which bodies experience, and how to think about all physical phenomena; which has given birth to modern science, and changed the face of the globe; and which, aside from its more special uses, has played a principal part in directing the course of modern thought, and in furthering modern social development. It is, therefore, worth some pains to comprehend it. According to our rule, we must begin by asking what is the immediate use of thinking about force; and the answer is, that we thus account for changes of motion. If bodies were left to themselves, without the intervention of forces, every motion would continue unchanged both in velocity and in direction. Furthermore, change of motion never takes place abruptly; if its direction is changed, it is always through a curve without angles; if its velocity alters, it is by degrees. The gradual changes which are constantly taking place are conceived by geometers to be compounded together according to the rules of the parallelogram of forces. If the reader does not already know what this is, he will find it, I hope, to his advantage to endeavor to follow the following explanation; but if mathematics are insupportable to him, pray let him skip three paragraphs rather than that we should part company here.

A *path* is a line whose beginning and end are distinguished. Two paths are considered to be equivalent, which, beginning at the same point, lead to the same point. Thus the two paths, *ABCDE* and *AFGHE*, are equivalent (Fig. 3). Paths which do *not* begin at the same point are considered to be equivalent, provided that, on moving either of them without turning it, but keeping it always parallel to its original position, when its beginning coincides with that of the other path, the ends also coincide. Paths are considered as geometrically added together, when one begins

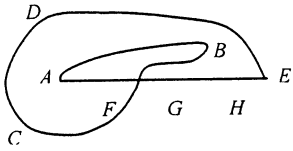

Figure 3

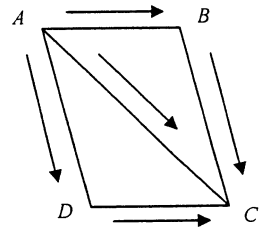

Figure 4

where the other ends; thus the path *AE* is conceived to be a sum of *AB*, *BC*, *CD*, and *DE*. In the parallelogram of Fig. 4 the diagonal *AC* is the sum of *AB* and *BC*; or, since *AD* is geometrically equivalent to *BC*, *AC* is the geometrical sum of *AB* and *AD*.

All this is purely conventional. It simply amounts to this: that we choose to call paths having the relations I have described equal or added. But, though it is a convention, it is a convention with a good reason. The rule for geometrical addition may be applied not only to paths, but to any other things which can be represented by paths. Now, as a path is determined by the varying direction and distance of the point which moves over it from the starting-point, it follows that anything which from its beginning to its end is determined by a varying direction and a varying magnitude is capable of being represented by a line. Accordingly, *velocities* may be represented by lines, for they have only directions and rates. The same thing is true of *accelerations*, or changes of velocities. This is evident enough in the case of velocities; and it becomes evident for accelerations if we consider that precisely what velocities are to positions – namely, states of change of them – that accelerations are to velocities.

The so-called "parallelogram of forces" is simply a rule for compounding accelerations. The rule is, to represent the accelerations by paths, and then to geometrically add the paths. The geometers, however, not only use the "parallelogram of forces" to compound different accelerations, but also to resolve one acceleration into a sum of several. Let *AB* (Fig. 5) be the path which represents a certain acceleration – say, such a change in the motion of a

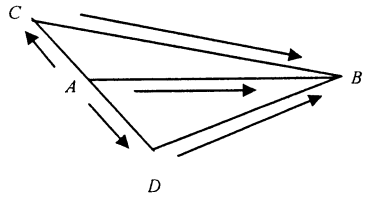

Figure 5

body that at the end of one second the body will, under the influence of that change, be in a position different from what it would have had if its motion had continued unchanged such that a path equivalent to *AB* would lead from the latter position to the former. This acceleration may be considered as the sum of the accelerations represented by *AC* and *CB*. It may also be considered as the sum of the very different accelerations represented by *AD* and *DB*, where *AD* is almost the opposite of *AC*. And it is clear that there is an immense variety of ways in which *AB* might be resolved into the sum of two accelerations.

After this tedious explanation, which I hope, in view of the extraordinary interest of the conception of force, may not have exhausted the reader's patience, we are prepared at last to state the grand fact which this conception embodies. This fact is that if the actual changes of motion which the different particles of bodies experience are each resolved in its appropriate way, each component acceleration is precisely such as is prescribed by a certain law of Nature, according to which bodies in the relative positions which the bodies in question actually have at the moment,[1] always receive certain accelerations, which, being compounded by geometrical addition, give the acceleration which the body actually experiences.

This is the only fact which the idea of force represents, and whoever will take the trouble clearly to apprehend what this fact is, perfectly comprehends what force is. Whether we ought to say that a force *is* an acceleration, or that it *causes* an acceleration, is a mere question of propriety of language, which has no more to do with our real meaning than the difference between the French idiom "*Il fait froid*" and its English equivalent "*It is cold.*" Yet it is surprising to see how this simple affair has muddled men's minds. In how many profound treatises is not force spoken of as a "mysterious entity," which seems to be only a way of confessing that the author despairs of ever getting a clear notion of what the word means! In a recent admired work on "Analytic Mechanics" it is stated that we understand precisely the effect of force, but what force itself is we do not understand! This is simply a self-contradiction. The idea which the word force excites in our minds has no other function than to affect our actions, and these actions can have no reference to force otherwise than through its effects. Consequently, if we know what the effects of force are, we are acquainted with every fact which is implied in saying that a force exists, and there is nothing more to know. The truth is, there is some vague notion afloat that a question may mean something which the mind cannot conceive; and when some hair-splitting philosophers have been confronted with the absurdity of such a view, they have invented an empty distinction between positive and negative conceptions,

[1] Possibly the velocities also have to be taken into account.

in the attempt to give their non-idea a form not obviously nonsensical. The nullity of it is sufficiently plain from the considerations given a few pages back; and, apart from those considerations, the quibbling character of the distinction must have struck every mind accustomed to real thinking.

IV

Let us now approach the subject of logic, and consider a conception which particularly concerns it, that of *reality*. Taking clearness in the sense of familiarity, no idea could be clearer than this. Every child uses it with perfect confidence, never dreaming that he does not understand it. As for clearness in its second grade, however, it would probably puzzle most men, even among those of a reflective turn of mind, to give an abstract definition of the real. Yet such a definition may perhaps be reached by considering the points of difference between reality and its opposite, fiction. A figment is a product of somebody's imagination; it has such characters as his thought impresses upon it. That those characters are independent of how you or I think is an external reality. There are, however, phenomena within our own minds, dependent upon our thought, which are at the same time real in the sense that we really think them. But though their characters depend on how we think, they do not depend on what we think those characters to be. Thus, a dream has a real existence as a mental phenomenon, if somebody has really dreamt it; that he dreamt so and so, does not depend on what anybody thinks was dreamt, but is completely independent of all opinion on the subject. On the other hand, considering, not the fact of dreaming, but the thing dreamt, it retains its peculiarities by virtue of no other fact than that it was dreamt to possess them. Thus we may define the real as that whose characters are independent of what anybody may think them to be.

But, however satisfactory such a definition may be found, it would be a great mistake to suppose that it makes the idea of reality perfectly clear. Here, then, let us apply our rules. According to them, reality, like every other quality, consists in the peculiar sensible effects which things partaking of it produce. The only effect which real things have is to cause belief, for all the sensations which they excite emerge into consciousness in the form of beliefs. The question therefore is, how is true belief (or belief in the real) distinguished from false belief (or belief in fiction). Now, as we have seen in the former paper, the ideas of truth and falsehood, in their full development, appertain exclusively to the scientific method of settling opinion. A person who arbitrarily chooses the propositions which he will adopt can use the word truth only to emphasize the expression of his determination to hold on to his choice. Of course, the method of tenacity never prevailed exclusively; reason is too natural to men for that. But in the literature of the dark ages we find some fine examples of it. When Scotus Erigena is commenting upon a poetical

passage in which hellebore is spoken of as having caused the death of Socrates, he does not hesitate to inform the inquiring reader that Helleborus and Socrates were two eminent Greek philosophers, and that the latter having been overcome in argument by the former took the matter to heart and died of it! What sort of an idea of truth could a man have who could adopt and teach, without the qualification of a perhaps, an opinion taken so entirely at random? The real spirit of Socrates, who I hope would have been delighted to have been "overcome in argument," because he would have learned something by it, is in curious contrast with the naive idea of the glossist, for whom discussion would seem to have been simply a struggle. When philosophy began to awake from its long slumber, and before theology completely dominated it, the practice seems to have been for each professor to seize upon any philosophical position he found unoccupied and which seemed a strong one, to intrench himself in it, and to sally forth from time to time to give battle to the others. Thus, even the scanty records we possess of those disputes enable us to make out a dozen or more opinions held by different teachers at one time concerning the question of nominalism and realism. Read the opening part of the "Historia Calamitatum" of Abelard, who was certainly as philosophical as any of his contemporaries, and see the spirit of combat which it breathes. For him, the truth is simply his particular stronghold. When the method of authority prevailed, the truth meant little more than the Catholic faith. All the efforts of the scholastic doctors are directed toward harmonizing their faith in Aristotle and their faith in the Church, and one may search their ponderous folios through without finding an argument which goes any further. It is noticeable that where different faiths flourish side by side, renegades are looked upon with contempt even by the party whose belief they adopt; so completely has the idea of loyalty replaced that of truth-seeking. Since the time of Descartes, the defect in the conception of truth has been less apparent. Still, it will sometimes strike a scientific man that the philosophers have been less intent on finding out what the facts are, than on inquiring what belief is most in harmony with their system. It is hard to convince a follower of the *a priori* method by adducing facts; but show him that an opinion he is defending is inconsistent with what he has laid down elsewhere, and he will be very apt to retract it. These minds do not seem to believe that disputation is ever to cease; they seem to think that the opinion which is natural for one man is not so for another, and that belief will, consequently, never be settled. In contenting themselves with fixing their own opinions by a method which would lead another man to a different result, they betray their feeble hold of the conception of what truth is.

On the other hand, all the followers of science are fully persuaded that the processes of investigation, if only pushed far enough, will give one certain solution to every question to which they can be applied. One man may investigate the velocity of light by studying the transits of Venus and the aberration of the stars; another by the oppositions of Mars and the eclipses of Jupiter's

satellites; a third by the method of Fizeau; a fourth by that of Foucault; a fifth by the motions of the curves of Lissajous; a sixth, a seventh, an eighth, and a ninth, may follow the different methods of comparing the measures of statical and dynamical electricity. They may at first obtain different results, but, as each perfects his method and his processes, the results will move steadily together toward a destined centre. So with all scientific research. Different minds may set out with the most antagonistic views, but the progress of investigation carries them by a force outside of themselves to one and the same conclusion. This activity of thought by which we are carried, not where we wish, but to a foreordained goal, is like the operation of destiny. No modification of the point of view taken, no selection of other facts for study, no natural bent of mind even, can enable a man to escape the predestinate opinion. This great law is embodied in the conception of truth and reality. The opinion which is fated[2] to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real. That is the way I would explain reality.

But it may be said that this view is directly opposed to the abstract definition which we have given of reality, inasmuch as it makes the characters of the real depend on what is ultimately thought about them. But the answer to this is that, on the one hand, reality is independent, not necessarily of thought in general, but only of what you or I or any finite number of men may think about it; and that, on the other hand, though the object of the final opinion depends on what that opinion is, yet what that opinion is does not depend on what you or I or any man thinks. Our perversity and that of others may indefinitely postpone the settlement of opinion; it might even conceivably cause an arbitrary proposition to be universally accepted as long as the human race should last. Yet even that would not change the nature of the belief, which alone could be the result of investigation carried sufficiently far; and if, after the extinction of our race, another should arise with faculties and disposition for investigation, that true opinion must be the one which they would ultimately come to. "Truth crushed to earth shall rise again," and the opinion which would finally result from investigation does not depend on how anybody may actually think. But the reality of that which is real does depend on the real fact that investigation is destined to lead, at last, if continued long enough, to a belief in it.

But I may be asked what I have to say to all the minute facts of history, forgotten never to be recovered, to the lost books of the ancients, to the buried secrets.

[2] Fate means merely that which is sure to come true, and can nohow be avoided. It is a superstition to suppose that a certain sort of events are ever fated, and it is another to suppose that the word fate can never be freed from its superstitious taint. We are all fated to die.

"Full many a gem of purest ray serene
The dark, unfathomed caves of ocean bear;
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air."

Do these things not really exist because they are hopelessly beyond the reach of our knowledge? And then, after the universe is dead (according to the prediction of some scientists), and all life has ceased forever, will not the shock of atoms continue though there will be no mind to know it? To this I reply that, though in no possible state of knowledge can any number be great enough to express the relation between the amount of what rests unknown to the amount of the known, yet it is unphilosophical to suppose that, with regard to any given question (which has any clear meaning), investigation would not bring forth a solution of it, if it were carried far enough. Who would have said, a few years ago, that we could ever know of what substances stars are made whose light may have been longer in reaching us than the human race has existed? Who can be sure of what we shall not know in a few hundred years? Who can guess what would be the result of continuing the pursuit of science for ten thousand years, with the activity of the last hundred? And if it were to go on for a million, or a billion, or any number of years you please, how is it possible to say that there is any question which might not ultimately be solved?

But it may be objected, "Why make so much of these remote considerations, especially when it is your principle that only practical distinctions have a meaning?" Well, I must confess that it makes very little difference whether we say that a stone on the bottom of the ocean, in complete darkness, is brilliant or not – that is to say, that it *probably* makes no difference, remembering always that that stone *may* be fished up to-morrow. But that there are gems at the bottom of the sea, flowers in the untraveled desert, etc., are propositions which, like that about a diamond being hard when it is not pressed, concern much more the arrangement of our language than they do the meaning of our ideas.

It seems to me, however, that we have, by the application of our rule, reached so clear an apprehension of what we mean by reality, and of the fact which the idea rests on, that we should not, perhaps, be making a pretension so presumptuous as it would be singular, if we were to offer a metaphysical theory of existence for universal acceptance among those who employ the scientific method of fixing belief. However, as metaphysics is a subject much more curious than useful, the knowledge of which, like that of a sunken reef, serves chiefly to enable us to keep clear of it, I will not trouble the reader with any more Ontology at this moment. I have already been led much further into that path than I should have desired; and I have given the reader such a dose of mathematics, psychology, and all that is most abstruse, that I fear he may

already have left me, and that what I am now writing is for the compositor and proof-reader exclusively. I trusted to the importance of the subject. There is no royal road to logic, and really valuable ideas can only be had at the price of close attention. But I know that in the matter of ideas the public prefer the cheap and nasty; and in my next paper I am going to return to the easily intelligible, and not wander from it again. The reader who has been at the pains of wading through this month's paper, shall be rewarded in the next one by seeing how beautifully what has been developed in this tedious way can be applied to the ascertainment of the rules of scientific reasoning.

We have, hitherto, not crossed the threshold of scientific logic. It is certainly important to know how to make our ideas clear, but they may be ever so clear without being true. How to make them so, we have next to study. How to give birth to those vital and procreative ideas which multiply into a thousand forms and diffuse themselves everywhere, advancing civilization and making the dignity of man, is an art not yet reduced to rules, but of the secret of which the history of science affords some hints.

THE LAW OF MIND

Charles S. Peirce. "The Law of Mind." *The Monist* 2.3 (July 1892): 533–559.

In an article published in *The Monist* for January 1891, I endeavored to show what ideas ought to form the warp of a system of philosophy, and particularly emphasised that of absolute chance. In the number of April 1892, I argued further in favor of that way of thinking, which it will be convenient to christen *tychism* (from τύχη, chance). A serious student of philosophy will be in no haste to accept or reject this doctrine; but he will see in it one of the chief attitudes which speculative thought may take, feeling that it is not for an individual, nor for an age, to pronounce upon a fundamental question of philosophy. That is a task for a whole era to work out. I have begun by showing that *tychism* must give birth to an evolutionary cosmology, in which all the regularities of nature and of mind are regarded as products of growth, and to a Schelling-fashioned idealism which holds matter to be mere specialised and partially deadened mind. I may mention, for the benefit of those who are curious in studying mental biographies, that I was born and reared in the neighborhood of Concord, – I mean in Cambridge, – at the time when Emerson, Hedge, and their friends were disseminating the ideas that they had caught from Schelling, and Schelling from Plotinus, from Boehm, or from God knows what minds stricken with the monstrous mysticism of the East. But the atmosphere of Cambridge held many an antiseptic against Concord transcendentalism; and I am not conscious of having contracted any of that virus. Nevertheless, it is probable that some cultured bacilli, some benignant form of the disease was implanted in my soul, unawares, and that now, after long incubation, it comes to the surface, modified by mathematical conceptions and by training in physical investigations.

The next step in the study of cosmology must be to examine the general law of mental action. In doing this, I shall for the time drop my tychism out of view, in order to allow a free and independent expansion to another conception signalised in my first *Monist*-paper as one of the most indispensable to philosophy, though it was not there dwelt upon; I mean the idea of continuity The tendency to regard continuity, in the sense in which I shall define it, as an idea of prime importance in philosophy may conveniently be termed *synechism*. The present paper is intended chiefly to show what synechism is, and what it leads to. I attempted, a good many years ago, to develop this doctrine in the *Journal of Speculative Philosophy* (Vol. II); but

I am able now to improve upon that exposition, in which I was a little blinded by nominalistic prepossessions. I refer to it, because students may possibly find that some points not sufficiently explained in the present paper are cleared up in those earlier ones.

What the Law Is.

Logical analysis applied to mental phenomena shows that there is but one law of mind, namely, that ideas tend to spread continuously and to affect certain others which stand to them in a peculiar relation of affectibility. In this spreading they lose intensity, and especially the power of affecting others, but gain generality and become welded with other ideas.

I set down this formula at the beginning, for convenience; and now proceed to comment upon it.

Individuality of Ideas.

We are accustomed to speak of ideas as reproduced, as passed from mind to mind, as similar or dissimilar to one another, and, in short, as if they were substantial things; nor can any reasonable objection be raised to such expressions. But taking the word "idea" in the sense of an event in an individual consciousness, it is clear that an idea once past is gone forever, and any supposed recurrence of it is another idea. These two ideas are not present in the same state of consciousness, and therefore cannot possibly be compared. To say, therefore, that they are similar can only mean that an occult power from the depths of the soul forces us to connect them in our thoughts after they are both no more. We may note, here, in passing that of the two generally recognised principles of association, contiguity and similarity, the former is a connection due to a power without, the latter a connection due to a power within.

But what can it mean to say that ideas wholly past are thought of at all, any longer? They are utterly unknowable. What distinct meaning can attach to saying that an idea in the past in any way affects an idea in the future, from which it is completely detached? A phrase between the assertion and the denial of which there can in no case be any sensible difference is mere gibberish.

I will not dwell further upon this point, because it is a commonplace of philosophy.

Continuity of Ideas.

We have here before us a question of difficulty, analogous to the question of nominalism and realism. But when once it has been clearly formulated, logic leaves room for one answer only. How can a past idea be present? Can it be

present vicariously? To a certain extent, perhaps; but not merely so; for then the question would arise how the past idea can be related to its vicarious representation. The relation, being between ideas, can only exist in some consciousness: now that past idea was in no consciousness but that past consciousness that alone contained it; and that did not embrace the vicarious idea.

Some minds will here jump to the conclusion that a past idea cannot in any sense be present. But that is hasty and illogical. How extravagant, too, to pronounce our whole knowledge of the past to be mere delusion! Yet it would seem that the past is as completely beyond the bounds of possible experience as a Kantian thing-in-itself.

How can a past idea be present? Not vicariously. Then, only by direct perception. In other words, to be present, it must be *ipso facto* present. That is, it cannot be wholly past; it can only be going, infinitesimally past, less past than any assignable past date. We are thus brought to the conclusion that the present is connected with the past by a series of real infinitesimal steps.

It has already been suggested by psychologists that consciousness necessarily embraces an interval of time. But if a finite time be meant, the opinion is not tenable. If the sensation that precedes the present by half a second were still immediately before me, then, on the same principle the sensation preceding that would be immediately present, and so on *ad infinitum*. Now, since there is a time, say a year, at the end of which an idea is no longer *ipso facto* present, it follows that this is true of any finite interval, however short.

But yet consciousness must essentially cover an interval of time; for if it did not, we could gain no knowledge of time, and not merely no veracious cognition of it, but no conception whatever. We are, therefore, forced to say that we are immediately conscious through an infinitesimal interval of time.

This is all that is requisite. For, in this infinitesimal interval, not only is consciousness continuous in a subjective sense, that is, considered as a subject or substance having the attribute of duration; but also, because it is immediate consciousness, its object is *ipso facto* continuous. In fact, this infinitesimally spread-out consciousness is a direct feeling of its contents as spread out. This will be further elucidated below. In an infinitesimal interval we directly perceive the temporal sequence of its beginning, middle, and end, – not, of course, in the way of recognition, for recognition is only of the past, but in the way of immediate feeling. Now upon this interval follows another, whose beginning is the middle of the former, and whose middle is the end of the former. Here, we have an immediate perception of the temporal sequence of its beginning, middle, and end, or say of the second, third, and fourth instants. From these two immediate perceptions, we gain a mediate, or inferential, perception of the relation of all four instants. This mediate perception is objectively, or as to the object represented, spread over the four instants; but subjectively, or as itself the subject of duration, it is completely embraced in

the second moment. [The reader will observe that I use the word *instant* to mean a point of time, and *moment* to mean an infinitesimal duration.] If it is objected that, upon the theory proposed, we must have more than a mediate perception of the succession of the four instants, I grant it; for the sum of the two infinitesimal intervals is itself infinitesimal, so that it is immediately perceived. It is immediately perceived in the whole interval, but only mediately perceived in the last two thirds of the interval. Now, let there be an indefinite succession of these inferential acts of comparative perception; and it is plain that the last moment will contain objectively the whole series. Let there be, not merely an indefinite succession, but a continuous flow of inference through a finite time; and the result will be a mediate objective consciousness of the whole time in the last moment. In this last moment, the whole series will be recognised, or known as known before, except only the last moment, which of course will be absolutely unrecognisable to itself. Indeed, even this last moment will be recognised like the rest, or, at least, be just beginning to be so. There is a little *elenchus*, or appearance of contradiction, here, which the ordinary logic of reflection quite suffices to resolve.

Infinity and Continuity, in General.

Most of the mathematicians who during the last two generations have treated the differential calculus have been of the opinion that an infinitesimal quantity is an absurdity; although, with their habitual caution, they have often added "or, at any rate, the conception of an infinitesimal is so difficult, that we practically cannot reason about it with confidence and security." Accordingly, the doctrine of limits has been invented to evade the difficulty, or, as some say, to explain the signification of the word "infinitesimal." This doctrine, in one form or another, is taught in all the textbooks, though in some of them only as an alternative view of the matter; it answers well enough the purposes of calculation, though even in that application it has its difficulties.

The illumination of the subject by a strict notation for the logic of relatives had shown me clearly and evidently that the idea of an infinitesimal involves no contradiction, before I became acquainted with the writings of Dr. Georg Cantor (though many of these had already appeared in the *Mathematische Annalen* and in *Borchardt's Journal*, if not yet in the *Acta Mathematica*, all mathematical journals of the first distinction), in which the same view is defended with extraordinary genius and penetrating logic.

The prevalent opinion is that finite numbers are the only ones that we can reason about, at least, in any ordinary mode of reasoning, or, as some authors express it, they are the only numbers that can be reasoned about mathematically. But this is an irrational prejudice. I long ago showed that finite collections are distinguished from infinite ones only by one circumstance and its consequences, namely that to them is applicable a peculiar and unusual

mode of reasoning called by its discoverer, De Morgan, the "syllogism of transposed quantity."

Balzac, in the introduction of his *Physiologie du mariage*, remarks that every young Frenchman boasts of having seduced some Frenchwoman. Now, as a woman can only be seduced once, and there are no more Frenchwomen than Frenchmen, it follows, if these boasts are true, that no Frenchwomen escape seduction. If their number be finite, the reasoning holds. But since the population is continually increasing, and the seduced are on the average younger than the seducers, the conclusion need not be true. In like manner, De Morgan, as an actuary, might have argued that if an insurance company pays to its insured on an average more than they have ever paid it, including interest, it must lose money. But every modern actuary would see a fallacy in that, since the business is continually on the increase. But should war, or other cataclysm, cause the class of insured to be a finite one, the conclusion would turn out painfully correct, after all. The above two reasonings are examples of the syllogism of transposed quantity.

The proposition that finite and infinite collections are distinguished by the applicability to the former of the syllogism of transposed quantity ought to be regarded as the basal one of scientific arithmetic.

If a person does not know how to reason logically, and I must say that a great many fairly good mathematicians, – yea distinguished ones, – fall under this category, but simply uses a rule of thumb in blindly drawing inferences like other inferences that have turned out well, he will, of course, be continually falling into error about infinite numbers. The truth is such people do not reason, at all. But for the few who do reason, reasoning about infinite numbers is easier than about finite numbers, because the complicated syllogism of transposed quantity is not called for. For example, that the whole is greater than its part is not an axiom, as that eminently bad reasoner, Euclid, made it to be. It is a theorem readily proved by means of a syllogism of transposed quantity, but not otherwise. Of finite collections it is true, of infinite collections false. Thus, a part of the whole numbers are even numbers. Yet the even numbers are no fewer than all the numbers; an evident proposition since if every number in the whole series of whole numbers be doubled, the result will be the series of even numbers.

1, 2, 3, 4, 5, 6, etc.
2, 4, 6, 8, 10, 12, etc.

So for every number there is a distinct even number. In fact, there are as many distinct doubles of numbers as there are of distinct numbers. But the doubles of numbers are all even numbers.

In truth, of infinite collections there are but two grades of magnitude, the *endless* and the *innumerable*. Just as a finite collection is distinguished from

an infinite one by the applicability to it of a special mode of reasoning, the syllogism of transposed quantity, so, as I showed in the paper last referred to, a numerable collection is distinguished from an innumerable one by the applicability to it of a certain mode of reasoning, the Fermatian inference, or, as it is sometimes improperly termed, "mathematical induction."

As an example of this reasoning, Euler's demonstration of the binomial theorem for integral powers may be given. The theorem is that $(x + y)^n$, where n is a whole number, may be expanded into the sum of a series of terms of which the first is $x^n y^0$ and each of the others is derived from the next preceding by diminishing the exponent of x by 1 and multiplying by that exponent and at the same time increasing the exponent of y by 1 and dividing by that increased exponent. Now, suppose this proposition to be true for a certain exponent, $n = M$, then it must also be true for $n = M + 1$. For let one of the terms in the expansion of $(x + y)^M$ be written $Ax^p y^q$. Then, this term with the two following will be

$$Ax^p y^q + A(p / (q + 1))x^{p-1}y^{q+1} + A(p / (q + 1))((\mathrm{p} - 1) / (q + 2))x^{p-2}y^{q+2}$$

Now, when $(x + y)^M$ is multiplied by $x + y$ to give $(x + y)^{M+1}$, we multiply first by x and then by y instead of by x and add the two results. When we multiply by x, the second of the above three terms will be the only one giving a term involving $x^p y^{q+1}$ and the third will be the only one giving a term in $x^{p-1}y^{q+2}$; and when we multiply by y the first will be the only term giving a term in $x^p y^{q+1}$, and the second will be the only term giving a term in $x^{p-1}y^{q+2}$. Hence, adding like terms, we find that the coefficient of $x^p y^{q+1}$ in the expansion of $(x + y)^{M+1}$ will be the sum of the coefficients of the first two of the above three terms, and that the coefficient of $x^{p-1}y^{q+2}$ will be the sum of the coefficients of the last two terms. Hence, two successive terms in the expansion of $(x + y)^{M+1}$ will be

$$A(1 + (p / (q + 1)))x^p y^{q+1} + A(p / (q + 1))(1+((\mathrm{p} - 1) / (q + 2)))x^{p-1}y^{q+2}$$
$$= A((p + q + 1) / (q + 1))x^p y^{q+1} + A((p + q + 1) / (q + 1))(p / (q + 2))x^{p-1}y^{q+2}.$$

It is thus seen that the succession of terms follows the rule. Thus if any integral power follows the rule, so also does the next higher power. But the first power obviously follows the rule. Hence, all powers do so.

Such reasoning holds good of any collection of objects capable of being ranged in a series which, though it may be endless, can be numbered so that each member of it receives a definite integral number. For instance, all the whole numbers constitute such a numerable collection. Again, all numbers resulting from operating according to any definite rule with any finite number of whole numbers form such a collection. For they may be arranged in a series thus. Let F be the symbol of operation. First operate on 1, giving F(1). Then, operate on a second 1, giving F(1,1). Next, introduce 2, giving 3rd, F(2); 4th,

F(2,1); 5th, F(1,2); 6th, F(2,2). Next use a third variable giving 7th, F(1,1,1); 8th, F(2,1,1); 9th, F(1,2,1); 10th, F(2,2,1); 11th, F(1,1,2); 12th, F(2,1,2); 13th, F(1,2,2); 14th, F(2,2,2). Next introduce 3, and so on, alternately introducing new variables and new figures; and in this way it is plain that every arrangement of integral values of the variables will receive a numbered place in the series.[1]

The class of endless but numerable collections (so called because they can be so ranged that to each one corresponds a distinct whole number) is very large. But there are collections which are certainly innumerable. Such is the collection of all numbers to which endless series of decimals are capable of approximating. It has been recognised since the time of Euclid that certain numbers are surd or incommensurable, and are not exactly expressible by any finite series of decimals, nor by a circulating decimal. Such is the ratio of the circumference of a circle to its diameter, which we know is nearly 3.1415926. The calculation of this number has been carried to over 700 figures without the slightest appearance of regularity in their sequence. The demonstrations that this and many other numbers are incommensurable are perfect. That the entire collection of incommensurable numbers is innumerable has been clearly proved by Cantor. I omit the demonstration; but it is easy to see that to discriminate one from some other would, in general, require the use of an endless series of numbers. Now if they cannot be exactly expressed and discriminated, clearly they cannot be ranged in a linear series.

It is evident that there are as many points on a line or in an interval of time as there are of real numbers, in all. These are, therefore, innumerable collections. Many mathematicians have incautiously assumed that the points on a surface or in a solid are more than those on a line. But this has been refuted by Cantor. Indeed, it is obvious that for every set of values of coördinates there is a single distinct number. Suppose, for instance, the values of the coördinates all lie between 0 and +1. Then if we compose a number by putting in the first decimal place the first figure of the first coördinate, in the second the first figure of the second coördinate, and so on, and when the first figures are all dealt out go on to the second figures in like manner, it is plain that the values of the coördinates can be read off from the single resulting number, so that a triad or tetrad of numbers, each having innumerable values, has no more values than a single incommensurable number.

Were the number of dimensions infinite, this would fail; and the collection of infinite sets of numbers, having each innumerable variations, might, therefore, be greater than the simple innumerable collection, and might be called *endlessly infinite*. The single individuals of such a collection could not,

[1] This proposition is substantially the same as a theorem of Cantor, though it is enunciated in a much more general form.

however, be designated, even approximately, so that this is indeed a magnitude concerning which it would be possible to reason only in the most general way, if at all.

Although there are but two grades of magnitudes of infinite collections, yet when certain conditions are imposed upon the order in which individuals are taken, distinctions of magnitude arise from that cause. Thus, if a simply endless series be doubled by separating each unit into two parts, the successive first parts and also the second parts being taken in the same order as the units from which they are derived, this double endless series will, so long as it is taken in that order, appear as twice as large as the original series. In like manner the product of two innumerable collections, that is, the collection of possible pairs composed of one individual of each, if the order of continuity is to be maintained, is, by virtue of that order, infinitely greater than either of the component collections.

We now come to the difficult question, What is continuity? Kant confounds it with infinite divisibility, saying that the essential character of a continuous series is that between any two members of it a third can always be found. This is an analysis beautifully clear and definite; but, unfortunately, it breaks down under the first test. For according to this, the entire series of rational fractions arranged in the order of their magnitude, would be an infinite series, although the rational fractions are numerable, while the points of a line are innumerable. Nay, worse yet, if from that series of fractions any two with all that lie between them be excised, and any number of such finite gaps be made, Kant's definition is still true of the series, though it has lost all appearance of continuity.

Cantor defines a continuous series as one which is *concatenated* and *perfect*. By a concatenated series, he means such a one that if any two points are given in it, and any finite distance, however small, it is possible to proceed from the first point to the second through a succession of points of the series each at a distance from the preceding one less than the given distance. This is true of the series of rational fractions ranged in the order of their magnitude. By a perfect series, he means one which contains every point such that there is no distance so small that this point has not an infinity of points of the series within that distance of it. This is true of the series of numbers between 0 and 1 capable of being expressed by decimals in which only the digits 0 and 1 occur.

It must be granted that Cantor's definition includes every series that is continuous; nor can it be objected that it includes any important or indubitable case of a series not continuous. Nevertheless, it has some serious defects. In the first place, it turns upon metrical considerations; while the distinction between a continuous and a discontinuous series is manifestly non-metrical. In the next place, a perfect series is defined as one containing "every point" of a certain description. But no positive idea is conveyed of what all

the points are: that is definition by negation, and cannot be admitted. If that sort of thing were allowed, it would be very easy to say, at once, that the continuous linear series of points is one which contains every point of the line between its extremities. Finally, Cantor's definition does not convey a distinct notion of what the components of the conception of continuity are. It ingeniously wraps up its properties in two separate parcels, but does not display them to our intelligence.

Kant's definition expresses one simple property of a continuum; but it allows of gaps in the series. To mend the definition, it is only necessary to notice how these gaps can occur. Let us suppose, then, a linear series of points extending from a point, *A*, to a point, *B*, having a gap from *B* to a third point, *C*, and thence extending to a final limit, *D*; and let us suppose this series conforms to Kant's definition. Then, of the two points, *B* and *C*, one or both must be excluded from the series; for otherwise, by the definition, there would be points between them. That is, if the series contains *C*, though it contains all the points up to *B*, it cannot contain *B*. What is required, therefore, is to state in non-metrical terms that if a series of points up to a limit is included in a continuum the limit is included. It may be remarked that this is the property of a continuum to which Aristotle's attention seems to have been directed when he defines a continuum as something whose parts have a common limit. The property may be exactly stated as follows: If a linear series of points is continuous between two points, *A* and *D*, and if an endless series of points be taken, the first of them between *A* and *D* and each of the others between the last preceding one and *D*, then there is a point of the continuous series between all that endless series of points and *D*, and such that every other point of which this is true lies between this point and *D*. For example, take any number between 0 and 1, as 0.1; then, any number between 0.1 and 1, as 0.11; then any number between 0.11 and 1, as 0.111; and so on, without end. Then, because the series of real numbers between 0 and 1 is continuous, there must be a *least* real number, greater than every number of that endless series. This property, which may be called the Aristotelicity of the series, together with Kant's property, or its Kanticity, completes the definition of a continuous series.

The property of Aristotelicity may be roughly stated thus: a continuum contains the end point belonging to every endless series of points which it contains. An obvious corollary is that every continuum contains its limits. But in using this principle it is necessary to observe that a series may be continuous except in this, that it omits one or both of the limits.

Our ideas will find expression more conveniently if, instead of points upon a line, we speak of real numbers. Every real number is, in one sense, the limit of a series, for it can be indefinitely approximated to. Whether every real number is a limit of a *regular* series may perhaps be open to doubt. But the series referred to in the definition of Aristotelicity must be understood as

including all series whether regular or not. Consequently, it is implied that between any two points an innumerable series of points can be taken.

Every number whose expression in decimals requires but a finite number of places of decimals is commensurable. Therefore, incommensurable numbers suppose an infinitieth place of decimals. The word infinitesimal is simply the Latin form of infinitieth; that is, it is an ordinal formed from *infinitum*, as centesimal from *centum*. Thus, continuity supposes infinitesimal quantities. There is nothing contradictory about the idea of such quantities. In adding and multiplying them the continuity must not be broken up, and consequently they are precisely like any other quantities, except that neither the syllogism of transposed quantity, nor the Fermatian inference applies to them.

If A is a finite quantity and i an infinitesimal, then in a certain sense we may write $A + i = A$. That is to say, this is so for all purposes of measurement. But this principle must not be applied except to get rid of *all* the terms in the highest order of infinitesimals present. As a mathematician, I prefer the method of infinitesimals to that of limits, as far easier and less infested with snares. Indeed, the latter, as stated in some books, involves propositions that are false; but this is not the case with the forms of the method used by Cauchy, Duhamel, and others. As they understand the doctrine of limits, it involves the notion of continuity, and therefore contains in another shape the very same ideas as the doctrine of infinitesimals.

Let us now consider an aspect of the Aristotelical principle which is particularly important in philosophy. Suppose a surface to be part red and part blue; so that every point on it is either red or blue, and, of course, no part can be both red and blue. What, then, is the color of the boundary line between the red and the blue? The answer is that red or blue, to exist at all, must be spread over a surface; and the color of the surface is the color of the surface in the immediate neighborhood of the point. I purposely use a vague form of expression. Now, as the parts of the surface in the immediate neighborhood of any ordinary point upon a curved boundary are half of them red and half blue, it follows that the boundary is half red and half blue. In like manner, we find it necessary to hold that consciousness essentially occupies time; and what is present to the mind at any ordinary instant is what is present during a moment in which that instant occurs. Thus, the present is half past and half to come. Again, the color of the parts of a surface at any finite distance from a point, has nothing to do with its color just at that point; and, in the parallel, the feeling at any finite interval from the present has nothing to do with the present feeling, except vicariously. Take another case: the velocity of a particle at any instant of time is its mean velocity during an infinitesimal instant in which that time is contained. Just so my immediate feeling is my feeling through an infinitesimal duration containing the present instant.

Analysis of Time.

One of the most marked features about the law of mind is that it makes time to have a definite direction of flow from past to future. The relation of past to future is, in reference to the law of mind, different from the relation of future to past. This makes one of the great contrasts between the law of mind and the law of physical force, where there is no more distinction between the two opposite directions in time than between moving northward and moving southward.

In order, therefore, to analyse the law of mind, we must begin by asking what the flow of time consists in. Now, we find that in reference to any individual state of feeling, all others are of two classes, those which affect this one (or have a tendency to affect it, and what this means we shall inquire shortly), and those which do not. The present is affectible by the past but not by the future.

Moreover, if state *A* is affected by state *B*, and state *B* by state *C*, then *A* is affected by state *C*, though not so much so. It follows, that if *A* is affectible by *B*, *B* is not affectible by *A*.

If, of two states, each is absolutely unaffectible by the other, they are to be regarded as parts of the same state. They are contemporaneous.

To say that a state is *between* two states means that it affects one and is affected by the other. Between any two states in this sense lies an innumerable series of states affecting one another; and if a state lies between a given state and any other state which can be reached by inserting states between this state and any third state, these inserted states not immediately affecting or being affected by either, then the second state mentioned immediately affects or is affected by the first, in the sense that in the one the other is *ipso facto* present in a reduced degree.

These propositions involve a definition of time and of its flow. Over and above this definition they involve a doctrine, namely, that every state of feeling is affectible by every earlier state.

That Feelings Have Intensive Continuity.

Time with its continuity logically involves some other kind of continuity than its own. Time, as the universal form of change, cannot exist unless there is something to undergo change, and to undergo a change continuous in time, there must be a continuity of changeable qualities. Of the continuity of intrinsic qualities of feeling we can now form but a feeble conception. The development of the human mind has practically extinguished all feelings, except a few sporadic kinds, sound, colors, smells, warmth, etc., which now appear to be disconnected and disparate. In the case of colors, there is a tridimensional spread of feelings. Originally, all feelings may have been connected in the same way, and the presumption is that the number of dimensions was

endless. For development essentially involves a limitation of possibilities. But given a number of dimensions of feeling, all possible varieties are obtainable by varying the intensities of the different elements. Accordingly, time logically supposes a continuous range of intensity in feeling. It follows, then, from the definition of continuity, that when any particular kind of feeling is present, an infinitesimal continuum of all feelings differing infinitesimally from that is present.

That Feelings Have Spatial Extension.

Consider a gob of protoplasm, say an amoeba or a slime-mould. It does not differ in any radical way from the contents of a nerve-cell, though its functions may be less specialised. There is no doubt that this slime-mould, or this amœba, or at any rate some similar mass of protoplasm feels. That is to say, it feels when it is in its excited condition. But note how it behaves. When the whole is quiescent and rigid, a place upon it is irritated. Just at this point, an active motion is set up, and this gradually spreads to other parts. In this action, no unity nor relation to a nucleus, or other unitary organ can be discerned. It is a mere amorphous continuum of protoplasm, with feeling passing from one part to another. Nor is there anything like a wave-motion. The activity does not advance to new parts, just as fast as it leaves old parts. Rather, in the beginning, it dies out at a slower rate than that at which it spreads. And while the process is going on, by exciting the mass at another point, a second quite independent state of excitation will be set up. In some places, neither excitation will exist, in others each separately, in still other places, both effects will be added together. Whatever there is in the whole phenomenon to make us think there is feeling in such a mass of protoplasm, – *feeling*, but plainly no *personality*, – goes logically to show that that feeling has a subjective, or substantial, spatial extension, as the excited state has. This is, no doubt, a difficult idea to seize, for the reason that it is a subjective, not an objective, extension. It is not that we have a feeling of bigness; though Professor James, perhaps rightly, teaches that we have. It is that the feeling, as a subject of inhesion, is big. Moreover, our own feelings are focused in attention to such a degree that we are not aware that ideas are not brought to an absolute unity; just as nobody not instructed by special experiment has any idea how very, very little of the field of vision is distinct. Still, we all know how the attention wanders about among our feelings; and this fact shows that those feelings that are not coördinated in attention have a reciprocal externality, although they are present at the same time. But we must not tax introspection to make a phenomenon manifest which essentially involves externality.

Since space is continuous, it follows that there must be an immediate community of feeling between parts of mind infinitesimally near together.

Without this, I believe it would have been impossible for minds external to one another ever to become coördinated, and equally impossible for any coördination to be established in the action of the nerve-matter of one brain.

Affections of Ideas.

But we are met by the question what is meant by saying that one idea affects another. The unravelment of this problem requires us to trace out phenomena a little further.

Three elements go to make up an idea. The first is its intrinsic quality as a feeling. The second is the energy with which it affects other ideas, an energy which is infinite in the here-and-nowness of immediate sensation, finite and relative in the recency of the past. The third element is the tendency of an idea to bring along other ideas with it.

As an idea spreads, its power of affecting other ideas gets rapidly reduced; but its intrinsic quality remains nearly unchanged. It is long years now since I last saw a cardinal in his robes; and my memory of their color has become much dimmed. The color itself, however, is not remembered as dim. I have no inclination to call it a dull red. Thus, the intrinsic quality remains little changed; yet more accurate observation will show a slight reduction of it. The third element, on the other hand, has increased. As well as I can recollect, it seems to me the cardinals I used to see wore robes more scarlet than vermilion is, and highly luminous. Still, I know the color commonly called cardinal is on the crimson side of vermilion and of quite moderate luminosity, and the original idea calls up so many other hues with it, and asserts itself so feebly, that I am unable any longer to isolate it.

A finite interval of time generally contains an innumerable series of feelings; and when these become welded together in association, the result is a general idea. For we have just seen how by continuous spreading an idea becomes generalised.

The first character of a general idea so resulting is that it is living feeling. A continuum of this feeling, infinitesimal in duration, but still embracing innumerable parts, and also, though infinitesimal, entirely unlimited, is immediately present. And in its absence of boundedness a vague possibility of more than is present is directly felt.

Second, in the presence of this continuity of feeling, nominalistic maxims appear futile. There is no doubt about one idea affecting another, when we can directly perceive the one gradually modified and shaping itself into the other. Nor can there any longer be any difficulty about one idea resembling another, when we can pass along the continuous field of quality from one to the other and back again to the point which we had marked.

Third, consider the insistency of an idea. The insistency of a past idea with reference to the present is a quantity which is less the further back that past

idea is, and rises to infinity as the past idea is brought up into coincidence with the present. Here we must make one of those inductive applications of the law of continuity which have produced such great results in all the positive sciences. We must extend the law of insistency into the future. Plainly, the insistency of a future idea with reference to the present is a quantity affected by the minus sign; for it is the present that affects the future, if there be any effect, not the future that affects the present. Accordingly, the curve of insistency is a sort of equilateral hyperbola. [See the figure.] Such a conception is none the less mathematical, that its quantification cannot now be exactly specified.

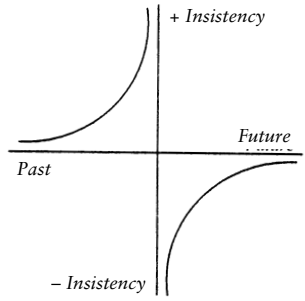

Figure 6

Now consider the induction which we have here been led into. This curve says that feeling which has not yet emerged into immediate consciousness is already affectible and already affected. In fact, this is habit, by virtue of which an idea is brought up into present consciousness by a bond that had already been established between it and another idea while it was still *in futuro*.

We can now see what the affection of one idea by another consists in. It is that the affected idea is attached as a logical predicate to the affecting idea as subject. So when a feeling emerges into immediate consciousness, it always appears as a modification of a more or less general object already in the mind. The word suggestion is well adapted to expressing this relation. The future is suggested by, or rather is influenced by the suggestions of, the past.

Ideas Cannot Be Connected Except by Continuity.

That ideas can nowise be connected without continuity is sufficiently evident to one who reflects upon the matter. But still the opinion may be entertained that after continuity has once made the connection of ideas possible, then they may get to be connected in other modes than through continuity. Certainly,

I cannot see how anyone can deny that the infinite diversity of the universe, which we call chance, may bring ideas into proximity which are not associated in one general idea. It may do this many times. But then the law of continuous spreading will produce a mental association; and this I suppose is an abridged statement of the way the universe has been evolved. But if I am asked whether a blind *ἀνάγκη* cannot bring ideas together, first I point out that it would not remain blind. There being a continuous connection between the ideas, they would infallibly become associated in a living, feeling, and perceiving general idea. Next, I cannot see what the mustness or necessity of this *ἀνάγκη* would consist in. In the absolute uniformity of the phenomenon, says the nominalist. Absolute is well put in; for if it merely happened so three times in succession, or three million times in succession, in the absence of any reason, the coincidence could only be attributed to chance. But absolute uniformity must extend over the whole infinite future; and it is idle to talk of that except as an idea. No; I think we can only hold that wherever ideas come together they tend to weld into general ideas; and wherever they are generally connected, general ideas govern the connection; and these general ideas are living feelings spread out.

Mental Law Follows the Forms of Logic.

The three main classes of logical inference are Deduction, Induction, and Hypothesis. These correspond to three chief modes of action of the human soul. In deduction the mind is under the dominion of a habit or association by virtue of which a general idea suggests in each case a corresponding reaction. But a certain sensation is seen to involve that idea. Consequently, that sensation is followed by that reaction. That is the way the hind legs of a frog, separated from the rest of the body, reason, when you pinch them. It is the lowest form of psychical manifestation.

By induction, a habit becomes established. Certain sensations, all involving one general idea, are followed each by the same reaction; and an association becomes established, whereby that general idea gets to be followed uniformly by that reaction.

Habit is that specialisation of the law of mind whereby a general idea gains the power of exciting reactions. But in order that the general idea should attain all its functionality, it is necessary, also, that it should become suggestible by sensations. That is accomplished by a psychical process having the form of hypothetic inference. By hypothetic inference, I mean, as I have explained in other writings, an induction from qualities. For example, I know that the kind of man known and classed as a "mugwump" has certain characteristics. He has a high self-respect and places great value upon social distinction. He laments the great part that rowdyism and unrefined good fellowship play in the dealings of American politicians with their constituency. He thinks that the reform which would follow from the abandonment of the system by which the distribution

of offices is made to strengthen party organisations and a return to the original and essential conception of office-filling would be found an unmixed good. He holds that monetary considerations should usually be the decisive ones in questions of public policy. He respects the principle of individualism and of *laisser-faire* as the greatest agency of civilisation. These views, among others, I know to be obtrusive marks of a "mugwump." Now, suppose I casually meet a man in a railway-train, and falling into conversation find that he holds opinions of this sort; I am naturally led to suppose that he is a "mugwump." That is hypothetic inference. That is to say, a number of readily verifiable marks of a mugwump being selected, I find this man has these, and infer that he has all the other characters which go to make a thinker of that stripe. Or let us suppose that I meet a man of a semi-clerical appearance and a sub-pharisaical sniff, who appears to look at things from the point of view of a rather wooden dualism. He cites several texts of scripture and always with particular attention to their logical implications; and he exhibits a sternness, almost amounting to vindictiveness, towards evil-doers in general. I readily conclude that he is a minister of a certain denomination. Now the mind acts in a way similar to this, every time we acquire a power of coördinating reactions in a peculiar way, as in performing any act requiring skill. Thus, most persons have a difficulty in moving the two hands simultaneously and in opposite directions through two parallel circles nearly in the medial plane of the body. To learn to do this, it is necessary to attend, first, to the different actions in different parts of the motion, when suddenly a general conception of the action springs up and it becomes perfectly easy. We think the motion we are trying to do involves this action, and this, and this. Then, the general idea comes which unites all those actions, and thereupon the desire to perform the motion calls up the general idea. The same mental process is many times employed whenever we are learning to speak a language or are acquiring any sort of skill.

Thus, by induction, a number of sensations followed by one reaction become united under one general idea followed by the same reaction; while, by the hypothetic process, a number of reactions called for by one occasion get united in a general idea which is called out by the same occasion. By deduction, the habit fulfils its function of calling out certain reactions on certain occasions.

Uncertainty of Mental Action.

The inductive and hypothetic forms of inference are essentially probable inferences, not necessary; while deduction may be either necessary or probable.

But no mental action seems to be necessary or invariable in its character. In whatever manner the mind has reacted under a given sensation, in that manner it is the more likely to react again; were this, however, an absolute

necessity, habits would become wooden and ineradicable and, no room being left for the formation of new habits, intellectual life would come to a speedy close. Thus, the uncertainty of the mental law is no mere defect of it, but is on the contrary of its essence. The truth is, the mind is not subject to "law," in the same rigid sense that matter is. It only experiences gentle forces which merely render it more likely to act in a given way than it otherwise would be. There always remains a certain amount of arbitrary spontaneity in its action, without which it would be dead.

Some psychologists think to reconcile the uncertainty of reactions with the principle of necessary causation by means of the law of fatigue. Truly for a *law*, this law of fatigue is a little lawless. I think it is merely a case of the general principle that an idea in spreading loses its insistency. Put me tarragon into my salad, when I have not tasted it for years, and I exclaim, "What nectar is this!" But add it to every dish I taste for week after week, and a habit of expectation has been created; and in thus spreading into habit, the sensation makes hardly any more impression upon me; or, if it be noticed, it is on a new side from which it appears as rather a bore. The doctrine that fatigue is one of the primordial phenomena of mind I am much disposed to doubt. It seems a somewhat little thing to be allowed as an exception to the great principle of mental uniformisation. For this reason, I prefer to explain it in the manner here indicated, as a special case of that great principle. To consider it as something distinct in its nature, certainly somewhat strengthens the necessitarian position; but even if it be distinct, the hypothesis that all the variety and apparent arbitrariness of mental action ought to be explained away in favor of absolute determinism does not seem to me to recommend itself to a sober and sound judgment, which seeks the guidance of observed facts and not that of prepossessions.

Restatement of the Law.

Let me now try to gather up all these odds and ends of commentary and restate the law of mind, in a unitary way.

First, then, we find that when we regard ideas from a nominalistic, individualistic, sensualistic way, the simplest facts of mind become utterly meaningless. That one idea should resemble another or influence another, or that one state of mind should so much as be thought of in another, is, from that standpoint, sheer nonsense.

Second, by this and other means we are driven to perceive, what is quite evident of itself, that instantaneous feelings flow together into a continuum of feeling, which has in a modified degree the peculiar vivacity of feeling and has gained generality. And in reference to such general ideas, or continua of feeling, the difficulties about resemblance and suggestion and reference to the external, cease to have any force.

Third, these general ideas are not mere words, nor do they consist in this, that certain concrete facts will every time happen under certain descriptions of conditions; but they are just as much, or rather far more, living realities than the feelings themselves out of which they are concreted. And to say that mental phenomena are governed by law does not mean merely that they are describable by a general formula; but that there is a living idea, a conscious continuum of feeling, which pervades them, and to which they are docile.

Fourth, this supreme law, which is the celestial and living harmony, does not so much as demand that the special ideas shall surrender their peculiar arbitrariness and caprice entirely; for that would be self-destructive. It only requires that they shall influence and be influenced by one another.

Fifth, in what measure this unification acts, seems to be regulated only by special rules; or, at least, we cannot in our present knowledge say how far it goes. But it may be said that, judging by appearances, the amount of arbitrariness in the phenomena of human minds is neither altogether trifling nor very prominent.

Personality.

Having thus endeavored to state the law of mind, in general, I descend to the consideration of a particular phenomenon which is remarkably prominent in our own consciousnesses, that of personality. A strong light is thrown upon this subject by recent observations of double and multiple personality. The theory which at one time seemed plausible that two persons in one body corresponded to the two halves of the brain will, I take it, now be universally acknowledged to be insufficient. But that which these cases make quite manifest is that personality is some kind of coördination or connection of ideas. Not much to say, this, perhaps. Yet when we consider that, according to the principle which we are tracing out, a connection between ideas is itself a general idea, and that a general idea is a living feeling, it is plain that we have at least taken an appreciable step toward the understanding of personality. This personality, like any general idea, is not a thing to be apprehended in an instant. It has to be lived in time; nor can any finite time embrace it in all its fullness. Yet in each infinitesimal interval it is present and living, though specially colored by the immediate feelings of that moment. Personality, so far as it is apprehended in a moment, is immediate self-consciousness.

But the word coördination implies somewhat more than this; it implies a teleological harmony in ideas, and in the case of personality this teleology is more than a mere purposive pursuit of a predeterminate end; it is a developmental teleology. This is personal character. A general idea, living and conscious now, it is already determinative of acts in the future to an extent to which it is not now conscious.

This reference to the future is an essential element of personality. Were the ends of a person already explicit, there would be no room for development, for growth, for life; and consequently there would be no personality. The mere carrying out of predetermined purposes is mechanical. This remark has an application to the philosophy of religion. It is that a genuine evolutionary philosophy, that is, one that makes the principle of growth a primordial element of the universe, is so far from being antagonistic to the idea of a personal creator, that it is really inseparable from that idea; while a necessitarian religion is in an altogether false position and is destined to become disintegrated. But a pseudo-evolutionism which enthrones mechanical law above the principle of growth, is at once scientifically unsatisfactory, as giving no possible hint of how the universe has come about, and hostile to all hopes of personal relations to God.

Communication.

Consistently with the doctrine laid down in the beginning of this paper, I am bound to maintain that an idea can only be affected by an idea in continuous connection with it. By anything but an idea, it cannot be affected at all. This obliges me to say, as I do say, on other grounds, that what we call matter is not completely dead, but is merely mind hide-bound with habits. It still retains the element of diversification; and in that diversification there is life. When an idea is conveyed from one mind to another, it is by forms of combination of the diverse elements of nature, say by some curious symmetry, or by some union of a tender color with a refined odor. To such forms the law of mechanical energy has no application. If they are eternal, it is in the spirit they embody; and their origin cannot be accounted for by any mechanical necessity. They are embodied ideas; and so only can they convey ideas. Precisely how primary sensations, as colors and tones, are excited, we cannot tell, in the present state of psychology. But in our ignorance, I think that we are at liberty to suppose that they arise in essentially the same manner as the other feelings, called secondary. As far as sight and hearing are in question, we know that they are only excited by vibrations of inconceivable complexity; and the chemical senses are probably not more simple. Even the least psychical of peripheral sensations, that of pressure, has in its excitation conditions which, though apparently simple, are seen to be complicated enough when we consider the molecules and their attractions. The principle with which I set out requires me to maintain that these feelings are communicated to the nerves by continuity, so that there must be something like them in the excitants themselves. If this seems extravagant, it is to be remembered that it is the sole possible way of reaching any explanation of sensation, which otherwise must be pronounced a general fact, absolutely inexplicable and ultimate. Now absolute inexplicability is a hypothesis which sound logic refuses under any circumstances to justify.

I may be asked whether my theory would be favorable or otherwise to telepathy. I have no decided answer to give to this. At first sight, it seems unfavorable. Yet there may be modes of continuous connection between minds other than those of time and space.

The recognition by one person of another's personality takes place by means to some extent identical with the means by which he is conscious of his own personality. The idea of the second personality, which is as much as to say that second personality itself, enters within the field of direct consciousness of the first person, and is as immediately perceived as his ego, though less strongly. At the same time, the opposition between the two persons is perceived, so that the externality of the second is recognised.

The psychological phenomena of intercommunication between two minds have been unfortunately little studied. So that it is impossible to say, for certain, whether they are favorable to this theory or not. But the very extraordinary insight which some persons are able to gain of others from indications so slight that it is difficult to ascertain what they are, is certainly rendered more comprehensible by the view here taken.

A difficulty which confronts the synechistic philosophy is this. In considering personality, that philosophy is forced to accept the doctrine of a personal God; but in considering communication, it cannot but admit that if there is a personal God, we must have a direct perception of that person and indeed be in personal communication with him. Now, if that be the case, the question arises how it is possible that the existence of this being should ever have been doubted by anybody. The only answer that I can at present make is that facts that stand before our face and eyes and stare us in the face are far from being, in all cases, the ones most easily discerned. That has been remarked from time immemorial.

Conclusion.

I have thus developed as well as I could in a little space the *synechistic* philosophy, as applied to mind. I think that I have succeeded in making it clear that this doctrine gives room for explanations of many facts which without it are absolutely and hopelessly inexplicable; and further that it carries along with it the following doctrines: 1st, a logical realism of the most pronounced type; 2nd, objective idealism; 3rd, tychism, with its consequent thoroughgoing evolutionism. We also notice that the doctrine presents no hindrances to spiritual influences, such as some philosophies are felt to do.

PRAGMATISM

Charles S. Peirce. "Pragmatism." *Dictionary of Philosophy and Psychology*, ed. James Mark Baldwin (New York: Macmillan, 1902), vol. 2, pp. 321, 322.

The opinion that metaphysics is to be largely cleared up by the application of the following maxim for attaining clearness of apprehension: "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object."

This maxim was first proposed by C. S. Peirce in the *Popular Science Monthly* for January, 1878 (xii. 287); and he explained how it was to be applied to the doctrine of reality. The writer was led to the maxim by reflection upon Kant's *Critic of the Pure Reason.* Substantially the same way of dealing with ontology seems to have been practised by the Stoics. The writer subsequently saw that the principle might easily be misapplied, so as to sweep away the whole doctrine of incommensurables, and, in fact, the whole Weierstrassian way of regarding the calculus. In 1896 William James published his *Will to Believe*, and later his *Philosophical Conceptions and Practical Results*, which pushed this method to such extremes as must tend to give us pause. The doctrine appears to assume that the end of man is action – a stoical axiom which, to the present writer at the age of sixty, does not recommend itself so forcibly as it did at thirty. If it be admitted, on the contrary, that action wants an end, and that that end must be something of a general description, then the spirit of the maxim itself, which is that we must look to the upshot of our concepts in order rightly to apprehend them, would direct us towards something different from practical facts, namely, to general ideas, as the true interpreters of our thought. Nevertheless, the maxim has approved itself to the writer, after many years of trial, as of great utility in leading to a relatively high grade of clearness of thought. He would venture to suggest that it should always be put into practice with conscientious thoroughness, but that, when that has been done, and not before, a still higher grade of clearness of thought can be attained by remembering that the only ultimate good which the practical facts to which it directs attention can subserve is to further the development of concrete reasonableness; so that the meaning of the concept does not lie in any individual reactions at all, but in the manner in which those reactions contribute to that development. Indeed, in the article of 1878, above referred to, the writer practised better than he

preached; for he applied the stoical maxim most unstoically, in such a sense as to insist upon the reality of the objects of general ideas in their generality.

A widely current opinion during the last quarter of a century has been that reasonableness is not a good in itself, but only for the sake of something else. Whether it be so or not seems to be a synthetical question, not to be settled by an appeal to the principle of contradiction – as if a reason for reasonableness were absurd. Almost everybody will now agree that the ultimate good lies in the evolutionary process in some way. If so, it is not in individual reactions in their segregation, but in something general or continuous. Synechism is founded on the notion that the coalescence, the becoming continuous, the becoming governed by laws, the becoming instinct with general ideas, are but phases of one and the same process of the growth of reasonableness. This is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically. It is not opposed to pragmatism in the manner in which C. S. Peirce applied it, but includes that procedure as a step.

THE MAXIM OF PRAGMATISM

Charles S. Peirce. "The Maxim of Pragmatism." R 301, Harvard Lecture 1, 26 March 1903.

This is the inaugural lecture in a series of seven "lectures on pragmatism" delivered at Harvard University in the spring of 1903. Peirce read it on 26 March 1903. The text is based on the surviving manuscript listed as MS 301 in Richard S. Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* and preserved in the Houghton Library, Harvard University. Peirce did not title the lecture.

A certain maxim of Logic which I have called Pragmatism has recommended itself to me for divers reasons and on sundry considerations. Having taken it as my guide in most of my thought, I find that as the years of my knowledge of it lengthen, my sense of the importance of it presses upon me more and more. If it is only true, it is certainly a wonderfully efficient instrument. It is not to philosophy only that it is applicable. I have found it of signal service in every branch of science that I have studied. My want of skill in practical affairs does not prevent me from perceiving the advantage of being well imbued with pragmatism in the conduct of life.

Yet I am free to confess that objections to this way of thinking have forced themselves upon me and have been found more formidable the further my plummet has been dropped into the abyss of philosophy, and the closer my questioning at each new attempt to fathom its depths.

I propose, then, to submit to your judgment in half a dozen lectures an examination of the *pros* and *cons* of pragmatism by means of which I hope to show you the result of allowing to both *pros* and *cons* their full legitimate values. With more time I would gladly follow up the guiding thread so caught up and go on to ascertain what are the veritable conclusions, or at least the genera of veritable conclusions to which a carefully rectified pragmatism will truly lead. If you find what I say acceptable you will have learned something worth your while. If you can refute me, the gain will be chiefly on my side; but even in that even/t/, I anticipate your acknowledging, when I take my leave of you, that the discussion has not been without profit; and in future years I am confident that you will recur to these thoughts and find that you have more to thank me for than you could understand at first.

I suppose I may take it for granted that you all know what *pragmatism* is. I have met with a number of definitions of it lately, against none of which I am much disposed to raise any violent protest. Yet to say exactly what pragmatism is describes pretty well what you and I have to puzzle out together.

We must start with some rough approximation of it, and I am inclined to think that the shape in which I first stated it will be the most useful one to adopt as matter to work upon, chiefly because it is the form most personal to your lecturer, and which for that reason he can discourse *[on]* most intelligently. Besides, pragmatism and personality are more or less of the same kidney.

I sent forth my statement in January 1878; and for about twenty years never heard from it again. I let fly my dove; and that dove has never come back to me to this very day. But of late quite a brood of young ones have been fluttering about, from the feathers of which I might fancy that mine had found a brood. To speak plainly, a considerable number of philosophers have lately written as they might have written in case they had been reading either what I wrote but were ashamed to confess it, or had been reading something that some reader of mine had *[*written*]*. For they seem quite disposed to adopt my term *pragmatism*. I shouldn't wonder if they were ashamed of me. What could be more humiliating than to confess that one has learned anything of a logician? But for my part I am delighted to find myself sharing the opinions of so brilliant a company. The new pragmatists seem to be distinguished for their terse, vivid, and concrete style of expression together with a certain buoyancy of tone as if they were conscious of carrying about them the master key to all the secrets of metaphysics.

Every metaphysician is supposed to have some radical fault to find with every other, and I cannot find any direr fault with the new pragmatists than that they are *lively*. In order to be deep it is requisite to be dull.

On their side, one of the faults that I think they might find with me is that I make pragmatism to be a mere maxim of logic instead of a sublime principle of speculative philosophy.

In order to be admitted to better philosophical standing I have endeavored to put pragmatism as I understand it into the same form of a philosophical theorem. I have not succeeded any better than this:

> Pragmatism is the principle that every theoretical judgment expressible in a sentence in the indicative mood is a confused form of thought whose only meaning, if it has any, lies in its tendency to enforce a corresponding practical maxim expressible as a conditional sentence having its apodosis in the imperative mood.

But the Maxim of Pragmatism, as I originally stated it, *Revue Philosophique* VII, pp. 47, 48 and *Popular Science Monthly* XII, p. 293, is as follows:

> Pour développer le sens d'une pensée, il faut donc simplement déterminer quelles habitudes elle produit, car le sens d'une chose consiste simplement dans les habitudes qu'elle implique. Le caractère d'une habitude dépend de la façon dont elle peut nous faire agir non pas seulement dans telle circonstance probable, mais dans toute circonstance possible, si improbable qu'elle puisse être. Ce qu'est une habitude dépend de ces deux points: quand et comment elle fait agir. Pour le premier point: quand? tout stimulant à l'action dérive d'une perception; pour le second point: comment? le but de toute action est d'amener au résultat sensible. Nous atteignons ainsi le tangible et le pratique comme base de toute différence de pensée, si subtile qu'elle puisse être.
>
> Considérer quels sont les effets pratiques que nous pensons pouvoir être produits par l'objet de notre conception. La conception de tous ces effets est la conception complète de l'objet.
>
> Consider what effects that might conceivably have practical bearings we conceive the object of our conception to have: then, our conception of those effects is the whole of our conceptions of the object.

The utility of the maxim provided it is only true appears in a sufficient light in the original article. I will here add a few examples which were not given in that paper.

There are many problems connected with probabilities which are subject to doubt. One of them, for example, is this: Suppose an infinitely large company of infinitely rich men sit down to play against an infinitely rich bank at a game of chance, at which neither side has any advantage, each one betting a franc against a franc at each bet. Suppose that each player continues to play until he has netted a gain of one franc and then retires, surrendering his place to a new player.

The chance that a player will ultimately net a gain of a franc may be calculated as follows:

Let x_l be a player's chance, if he were to continue playing indefinitely, of ever netting a gain of l francs.

But after he has netted a gain of 1 franc, his chance of doing which is x_1, he is no richer than before, since he is infinitely rich. Consequently his chance of winning the second franc, after he has won the first, is the same as his chance of winning the first franc. That is, it is x_1 and his chance of winning both is $x_2 = (x_1)^2$. And so in general $x_l = (x_1)^l$.

Now his chance of netting a gain of 1 franc, x_1, is the sum of the chances of the two ways in which it may come about; namely, by first winning the first bet of which the chance is 1/2, and by first losing the first bet and then netting a gain of 2 francs of which the chance is $1/2\ x_1{}^2$.

Therefore

$$x_1 = 1/2 + 1/2x_1^2$$
$$\text{or} \quad x_1^2 - 2x_1 + 1 = 0$$
$$\text{or} \quad (x_1 - 1)^2 = 0.$$

But if the square of a number is zero, the number itself is zero. Therefore

$$x_1 - 1 = 0$$
$$\text{or} \quad x_1 = 1.$$

If so it must be certain that *every* player would win his franc and would retire.

Consequently there would be a continual outflow of money from the bank. And yet, since the game is an even one, the banker would not net any loss. How is this paradox to be explained?

The theory of probabilities is full of paradoxes and puzzles. Let us, then, apply the maxim of pragmatism to the solution of them.

In order to do this, we must ask, *What is meant by saying that the probability of an event has a certain value, p?* According to the maxim of pragmatism, then, we must ask what practical difference it can make whether the value is p or something else. Then we must ask how are probabilities applied to practical affairs. The answer is that the great business of insurance depends upon it. Probability is used in insurance to determine how much must be paid on a certain risk to make it safe to pay a certain sum if the event insured against should occur. Then, we must ask how can it be safe to engage to pay a large sum if an uncertain event occurs. The answer is that the insurance company does a very large business and is able to ascertain pretty closely out of a thousand risks of a given description how many in any one year will be losses. The business problem is this. The number of policies of a certain description that can be sold in a year will depend on the price set up on them. Let p be that price, and let n be the number that can be sold at that price, so that the larger p is, the smaller n will be. Now n being a large number a certain proportion q of these policies, qn in all, will be losses during the year; and if l be the loss on each, qnl will be the total loss. Then what the insurance company has to do is to set p at such a figure that $pn - qln$ or $(p - ql)n$ shall reach its maximum possible value.

The solution of this equation is

$$p = ql + (\partial p/\partial n)n.$$

where $\partial p/\partial n$ is the amount by which the price would have to be lowered in order to sell one policy more. Of course if the price were raised instead of lowered just one policy fewer would be sold.

For then by so lowering [the price,] the profit from being

$$(p - ql)n$$

would be changed to

$$(p - ql - (\partial p/\partial n))(n + 1)$$

that is, to

$$(p - ql)n + p - ql - (\partial p/\partial n)(n + 1)$$

and this being less than before

$$ql + (\partial p/\partial n)(n + 1) > p$$

and by raising it, the change would be to

$$(p - ql + (\partial p/\partial n))\ (n - 1)$$

that is, to

$$(p - ql)n - p + ql + (\partial p/\partial n)(n - 1)$$

and this being less than before

$$p > ql + (\partial p/\partial n)(n - 1).$$

So since p is intermediate between

$$ql + (\partial p/\partial n)n + (\partial p/\partial n)$$
$$\text{and}\quad ql + (\partial p/\partial n)n - (\partial p/\partial n)$$

and $(\partial p/\partial n)$ is very small, it must be very close to the truth to write

$$p = ql + (\partial p/\partial n)n.$$

This is the problem of insurance. Now in order that probability may have any bearing on this problem, it is obvious that it must be of the nature of a *real fact* and not a mere *state of mind*. For facts only enter into the solution of the problem of insurance. And this fact must evidently be a fact of statistics.

Without now going into certain reasons of detail that I should enter into if I were lecturing on probabilities, it must be that probability is a *statistical*

ratio and further in order to satisfy still more special conditions, it is convenient, for the class of problems to which insurance belongs, to make it the statistical ratio of the number of experiential occurrences of a specific kind to the number of experiential occurrences of a generic kind, in the long run.

In order, then, that probability should mean anything, it will be requisite to specify to what *species* of event it refers and to what *genus* of event it refers.

It also refers to a *long run*, that is, to an indefinitely long series of occurrences taken together in the order of their occurrence in possible experience.

In this view of the matter, we note, to begin with, that a given species of event considered as belonging to a given genus of events does not necessarily have any definite probability. Because the probability is the ratio of one infinite multitude to another. Now infinity divided by infinity is altogether indeterminate, except in special cases.

It is very easy to give examples of events that have no definite probability. If a person agrees [to] toss up a cent again and again forever and, beginning as soon as the first head turns up, whenever two heads are separated by any odd number of tails in the succession of throws, pay 2 to that power in cents provided that whenever the two successive heads are separated by any even number of throws he receives 2 to that power in cents,[1] it is impossible to say what the probability will be that he comes out a winner.

In half of the cases after the first head, the next throw will be a head and he will receive $(-2)^0 = 1$ cent, which, since it happens half the time, will be in the long run a winning of 1/2 a cent per head thrown.

But in half of the other half [of] the cases, that is, in a quarter of all the cases, one tail will intervene and he will have to receive $(-2)^1 = -2$ cents, i.e., he will have to pay 2 cents, which happening a quarter of the time will make an average loss of 1/2 a cent per head thrown.

But in half the remaining quarter of the cases, i.e., one eighth of all the cases, two tails will intervene, and he will receive $(-2)^2 = 4$ cents, which happening once every eight times, will be worth 1/2 a cent per head thrown and so on; so that his account in the long run will be

$$1/2 - 1/2 + 1/2 - 1/2 + 1/2 - 1/2 + 1/2 - 1/2 \text{ ad infinitum},$$

the sum of which may be 1/2 or may be *zero*. Or rather it is quite indeterminate.

If instead of being paid $(-2)^n$ when n is the number of intervening tails, he were paid $(-2)^{n^2}$ the result would be that he would probably either win or lose enormously without there being any definite probability that it would be winning rather than losing.

[1] He receives $(-2)^n$ cents if n tails intervene between two successive heads.

I think I may recommend this game with confidence to gamblers as being the most frightful ruin yet invented; and a little cheating would do everything in it.

Now let us revert to our original problem and consider the state of things after every other bet. After the second,

G|G 1/4 of the players will have gained, gone out, and been replaced by players who have gained and gone out so that a number of francs equal to half the number of seats will have been paid out by the bank;
G|L 1/4 of the players will have gained and gone out and been replaced by players who have lost, making the bank even;
L|G 1/4 of the players will have lost and then gained, making the bank and them even;
L|L 1/4 of the players will have lost twice, making a gain to the bank of half as many francs as there are seats at the table.

The bank then will be where it was. Players to the number of three quarters of the seats will have netted their franc each; but players to the number of a quarter of the seats will have lost two francs each and another equal number one franc each, just paying for the gains of those who have retired.

That is the way it will happen every time. Just before the fifth bet of the player at the table, 3/8 will have lost nothing, 1/4 will have lost one franc, 1/4 two francs, 1/16 three francs and 1/16 four francs. Thus some will always have lost a good deal. Those who sit at the table will among them always have paid just what those who have gone out have carried away.

But it will be asked How then can it happen that *all* gain? I reply that I never said all would gain, I only said the probability was 1 that any one would ultimately gain his franc. But does not probability 1 mean certainty? Not at all, it only means that the ratio of the number of those who ultimately gain to the total number is 1. Since the number of seats at the table is infinite, the ratio of the number of those who never gain to the number of seats may be zero and yet they may be infinitely numerous. So that probabilities 1 and 0 are very far from corresponding to certainty *pro* and *con*.

If I were to go into practical matters, the advantage of pragmatism, of looking at the substantial practical issue, would be still more apparent. But here pragmatism is generally practised by successful men. In fact, the genus of efficient men *[is]* mainly distinguished from the inefficient precisely by this.

There is no doubt, then, that pragmatism opens a very easy road to the solution of an immense variety of questions. But it does not at all follow from that, that it is true. On the contrary, one may very properly entertain a suspicion of any method which so resolves the most difficult questions into easy problems. No doubt Ockham's razor is logically sound. A hypothesis should be stripped of every feature which is in no wise called for to furnish

an explanation of observed facts. *Entia non sunt multiplicanda praeter necessitatem*; only we may very well doubt whether a very simple hypothesis can contain every factor that is necessary. Certain it is that most hypotheses which at first seemed to unite great simplicity with entire sufficiency have had to be greatly complicated in the further progress of science.

What is the *proof* that the possible practical consequences of a concept constitute the sum total of the concept? The argument upon which I rested the maxim in my original paper was that *belief* consists mainly in being deliberately prepared to adopt the formula believed in as the guide to action. If this be in truth the nature of belief, then undoubtedly the proposition believed in can itself be nothing but a maxim of conduct. That, I believe, is quite evident.

But *how do we know* that belief is nothing but the deliberate preparedness to act according to the formula believed?

My original article carried this back to a psychological principle. The conception of truth according to me was developed out of an original impulse to act consistently, to have a definite intention. But in the first place, this was not very clearly made out, and in the second place, I do not think it satisfactory to reduce such fundamental things to facts of psychology. For man could alter his nature, or his environment would alter it if he did not voluntarily do so, if the impulse were not what was advantageous or fitting. Why has evolution made man's mind to be so constructed? That is the question we must nowadays ask, and all attempts to ground the fundamentals of logic on psychology are seen to be essentially shallow.

The question of the nature of belief, or in other words the question of what the true logical analysis of the act of judgment is, is the question upon which logicians of late years have chiefly concentrated their energies. Is the pragmatistic answer satisfactory?

Do we not all perceive that *judgment* is something closely allied to *assertion?* That is the view that ordinary speech entertains. A man or woman will be heard to use the phrase "I says to myself." That is, *judgment* is held to be either no more than an *assertion to oneself* or at any rate something very like that.

Now it is a fairly easy problem to analyze the nature of *assertion*. To find an easily dissected example, we shall naturally take a case where the assertive element is magnified, – a very formal assertion, such as an affidavit. Here a man goes before a notary or magistrate and takes such action that if what he says is not true, evil consequences will be visited upon him, and this he does with a view to thus causing other men to be affected just as they would if the proposition sworn to had presented itself to them as a perceptual fact.

We thus see that the act of assertion is an act of a totally different nature from the act of apprehending the meaning of the proposition and we cannot expect that any analysis of what assertion is or any analysis of what *judgment*

or *belief* is, if that act is at all allied to assertion, should throw any light at all on the widely different question of what the apprehension of the meaning of a proposition is.

What is the difference between making an *assertion* and *laying a wager?* Both are acts whereby the agent deliberately subjects himself to evil consequences if a certain proposition is not true. Only when he offers to bet he hopes the other man will make himself responsible in the same way for the truth of the contrary proposition; while when he makes an *assertion* he always (or almost always) wishes the man to whom he makes it to be led to do what he does. Accordingly, in our vernacular "I will bet" so and so, is the phrase expressive of a private opinion which one does not expect others to share, while "You bet"___ is a form of assertion intended to cause another to follow suit.

Such then seems at least in a preliminary glance at the matter to be a satisfactory account of assertion. Now let us pass to judgment and belief. There can, of course, be no question that a man will act in accordance with his belief so far as his belief has any practical consequences. The only doubt is whether this is *all* that belief is, whether belief is a mere nullity so far as it does not influence conduct. What possible effect upon conduct can it have, for example, to believe that the diagonal of a square is incommensurable with the side? Name a discrepancy *?* no matter how small, and the diagonal differs from a rational quantity by much less than that. Professor Newcomb in his calculus and all mathematicians of his rather antiquated fashion think that they have proved two quantities to be equal when they have proved that they differ by less than any assignable quantity. I once tried hard to make Newcomb say whether the diagonal of the square differed from a rational fraction of the side or not; but he saw what I was driving at and would not answer. The proposition that the diagonal is incommensurable has stood in the textbooks from time immemorial without ever being assailed and I am sure that the most modern type of mathematician holds to it most decidedly. Yet it seems quite absurd to say that there is any objective practical difference between commensurable and incommensurable.

Of course you can say if you like that the act of expressing a quantity as a rational fraction is a piece of conduct and that it is in itself a *practical* difference that one kind of quantity can be so expressed and the other not. But a thinker must be shallow indeed if he does not see that to admit a species of practicality that consists in one's conduct about words and modes of expression is at once to break down all the bars against the nonsense that pragmatism is designed to exclude.

What the pragmatist has his pragmatism for is to be able to say "here is a definition and it does not differ at all from your confusedly apprehended conception because there is no *practical* difference." But what is to prevent his opponent from replying that there is a practical difference which consists

in his recognizing one as his conception and not the other. That is, one is expressible in a way in which the other is not expressible.

Pragmatism is completely volatilized if you admit that sort of practicality.

It must be understood that all I am now attempting to show is that Pragmatism is apparently a matter of such great probable concern, and at the same time so much doubt hangs over its legitimacy, that it will be well worth our while to make a methodical, scientific, and thorough examination of the whole question, so as to make sure of our ground, and obtain some secure method for such a preliminary filtration of questions as pragmatism professes to furnish.

Let us, then, enter upon this inquiry. But before doing so let us mark out the proposed course of it. That should always be done in such cases, even if circumstances subsequently require the plan to be modified, as they usually will.

Although our inquiry is to be an inquiry into truth, whatever the truth may turn out to be, and therefore of course is not to be influenced by any liking for pragmatism or any pride in it as an American doctrine, yet still we do not come to this inquiry any more than anybody comes to any inquiry in that blank state that the lawyers pretend to insist upon as desirable; though I give them credit for enough common sense to know better.

We have some reason already to think there is some truth in pragmatism although we also have some reason to think that there is something wrong with it. For unless both branches of this statement were true we should do wrong to waste time and energy upon the inquiry we are undertaking.

I will, therefore, presume that there is enough truth in it to render a preliminary glance at ethics desirable. For if, as pragmatism teaches us, what we think is to be interpreted in terms of what we are prepared to do, then surely *logic*, or the doctrine of what we ought to think, must be an application of the doctrine of what we deliberately choose to do, which is Ethics.

But we cannot get any clue to the secret of Ethics, – a most entrancing field of thought but sown broadcast with pitfalls, – until we have first made up our formula for what it is that we are prepared to admire. I do not care what doctrine of ethics be embraced, it will always be so. Suppose for example our maxim of ethics to be Pearson's that all our action ought to be directed toward the perpetuation of the biological stock to which we belong. Then the question will arise, On what principle should it be deemed such a fine thing for this stock to survive, – or a fine thing at all? Is there nothing in the world or *in posse* that would be admirable *per se* except copulation and swarming? Is swarming a fine thing at all apart from any results that it may lead to? The course of thought will follow a parallel line if we consider Marshall's ethical maxim: "Act to restrain the impulses which demand immediate reaction, in order that the impulse-order determined by the existence of impulses of less strength, but of wider significance, may have full weight in the guidance of

your life." Although I have not as clear an apprehension as I could wish of the philosophy of this very close, but too technical, thinker, yet I presume that he would not be among those who would object to making Ethics dependent upon Esthetics. Certainly, this maxim which I have just read to you from his latest book supposes that it is a fine thing for an impulse to have its way, but yet not an equally fine thing for one impulse to have its way and for another impulse to have its way. There is a preference which depends upon the *significance* of impulses, whatever that may mean. It supposes that there is some ideal state of things which regardless of how it should be brought about and independently of any ulterior reason whatsoever, is held to be good or fine.

In short, ethics must rest upon a doctrine which without at all considering what our conduct is to be, divides ideally possible states of things into two classes, those that would be admirable and those that would be unadmirable, and undertakes to define precisely what it is that constitutes the admirableness of an ideal. Its problem is to determine by analysis what it is that one ought deliberately to admire *per se* in itself regardless of what it may lead to and regardless of its bearings upon human conduct. I call that inquiry *Esthetics*, because it is generally said that the three normative sciences are logic, ethics, and esthetics, being the three doctrines that distinguish *[*the*]* good and the bad, *Logic* in regard to representations of truth, *Ethics* in regard to efforts of will, and *Esthetics* in objects considered simply in their presentation. Now that third normative science can I think be no other than that which I have described. It is evidently the basic normative science upon which as a foundation the doctrine of ethics must be reared to be surmounted in its turn by the doctrine of logic.

But before we can attack any normative science, any science which proposes to separate the sheep from the goats, it is plain that there must be a preliminary inquiry which shall justify the attempt to establish such dualism. This must be a science that does *not* draw any distinction of good and bad in any sense whatever, but just contemplates phenomena as they are, simply opens its eyes and describes what it sees. Not what it sees in the real as distinguished from figment, – not regarding any such dichotomy, – but simply describing the object, as a phenomenon, and stating what it finds in all phenomena alike. This is the science which Hegel made his starting point, under the name of the *Phänomenologie des Geistes*, – although he considered it in a fatally narrow spirit, since he restricted himself to what *actually* forces itself on the mind and so colored his whole philosophy with the ignoration of the distinction of essence and existence and so gave it the nominalistic and I might say in a certain sense the *pragmatoidal* character in which the worst of the Hegelian errors have their origin. I will so far follow Hegel as to call this science *Phenomenology* although I will not restrict it to the observation and analysis of *experience* but extend it to describing all the features that are

common to whatever is *experienced* or might conceivably be experienced or become an object of study in any way direct or indirect.

Hegel was quite right in holding that it was the business of this science to bring out and make clear the *Categories* or fundamental modes. He was also right in holding that these *categories* are of two kinds, the universal categories, all of which apply to everything, and the series of categories consisting of phases of evolution.

As to these latter, I am satisfied that Hegel has not approximated to any correct catalogue of them. It may be that here and there, in the long wanderings of his *Encyclopaedia* he has been a little warmed by the truth. But in all its main features his catalogue is utterly wrong, according to me. I have made long and arduous studies of this matter, but I have not been able to draw up any catalogue that satisfies me. My studies, if they are ever published, will I believe be found helpful to future students of this most difficult problem; but in these lectures I shall have little to say on that subject. The case is quite different with the three Universal Categories, which Hegel, by the way, does not look upon as Categories at all, or at least he does not call them so, but as three stages of thinking. In regard to these, it appears to me that Hegel is so nearly right that my own doctrine might very well be taken for a variety of Hegelianism, although in point of fact it was determined in my mind by considerations entirely foreign to Hegel, at a time when my attitude toward Hegelianism was one of contempt. There was no influence upon me from Hegel unless it was of so occult a kind as to entirely escape my ken; and if there was such an occult influence, it strikes me as about as good an argument for the essential truth of the doctrine, as is the coincidence that Hegel and I arrived in quite independent ways substantially to the same result.

This science of phenomenology, then, must be taken as the basis upon which normative science is to be erected, and accordingly must claim our first attention.

This science of Phenomenology is in my view the most primal of all the positive sciences. That is, it is not based, as to its principles, upon any other *positive science*. By a *positive science* I mean an inquiry which seeks for *positive* knowledge, that is, for such knowledge as may conveniently be expressed in a *categorical proposition*. Logic and the other normative sciences, although they ask, not what *is* but what *ought to be*, nevertheless are positive sciences since it is by asserting positive, categorical truth that they are able to show that what they call good really is so; and the right reason, right effort, and right being of which they treat derive that character from positive categorical fact.

Perhaps you will ask me whether it is possible to conceive of a science which should not aim to declare that something is positively or categorically true. I reply that it is not only possible to conceive of such a science, but that such science exists and flourishes, and Phenomenology, which does not depend

upon any other *positive science*, nevertheless must, if it is to be properly grounded, be made to depend upon the Conditional or Hypothetical Science of *Pure Mathematics*, whose only aim is to discover not how things actually are, but how they might be supposed to be, if not in our universe, then in some other. A Phenomenology which does not reckon with pure mathematics, a science hardly come to years of discretion when Hegel wrote, will be the same pitiful clubfooted affair that Hegel produced.

PRAGMATISM AS THE LOGIC OF ABDUCTION

Charles S. Peirce. "Pragmatism as the Logic of Abduction." R 315, Harvard Lecture 7, 14 May 1903.

This is the last of seven lectures on pragmatism Peirce delivered at Harvard University in the spring of 1903. Delivered on 14 May 1903, this lecture was not titled by Peirce. The text is based on MS 315, as listed in Richard Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* and preserved in the Houghton Library, Harvard University.

I

Ladies and Gentlemen:

I am impelled to express my sense of gratitude at your kind interest in coming to listen to an extra lecture at this busy season of the year. I shall feel myself under an obligation to make a special endeavor to say something germinative.

At the end of my last lecture I had just enunciated three propositions which seem to me to give to pragmatism its peculiar character. In order to be able to refer to them briefly this evening, I will call them for the nonce my *cotary* propositions. *Cos, cotis* is a whetstone. They appear to me to put the edge on the maxim of pragmatism.

These *cotary* propositions are as follows:

First, *Nihil est in intellectu quin prius fuerit in sensu*. I take this in a sense somewhat different from that which Aristotle intended. By *intellectus*, I understand the *meaning* of any representation in any kind of cognition, virtual, symbolic, or whatever it may be. Berkeley and nominalists of his stripe deny that we have any idea at all of a triangle in general, which is neither equilateral, isosceles, nor scalene. But he cannot deny that there are propositions about triangles in general, which propositions are either true or false; and as long as that is the case, whether we have an *idea* of a triangle in some psychological sense or not, I do not, as a logician, care. We have an *intellectus*, a meaning, of which the triangle in general is an element. As for the other term, *in sensu*, that I take in the sense of in a *perceptual judgment*, the

starting-point or first premiss of all critical and controlled thinking. I will state presently what I conceive to be the evidence of the truth of this first cotary proposition. But I prefer to begin by recalling to you what all three of them are.

The second is that perceptual judgments contain general elements, so that universal propositions are deducible from them in the manner in which the logic of relations shows that particular propositions usually, not to say invariably, allow universal propositions to be necessarily inferred from them. This I sufficiently argued in my last lecture. This evening I shall take the truth of it for granted.

The third cotary proposition is that abductive inference shades into perceptual judgment without any sharp line of demarcation between them; or in other words our first premisses, the perceptual judgments, are to be regarded as an extreme case of abductive inferences, from which they differ in being absolutely beyond criticism. The abductive suggestion comes to us like a flash. It is an act of *insight*, although of extremely fallible insight. It is true that the different elements of the hypothesis were in our minds before; but it is the idea of putting together what we had never before dreamed of putting together which flashes the new suggestion before our contemplation.

On its side, the perceptive judgment is the result of a process, although of a process not sufficiently conscious to be controlled, or to state it more truly, not controllable and therefore not fully conscious. If we were to subject this subconscious process to logical analysis we should find that it terminated in what that analysis would represent as an abductive inference resting on the result of a similar process which a similar logical analysis would represent to be terminated by a similar abductive inference, and so on *ad infinitum*. This analysis would be precisely analogous to that which the sophism of Achilles and the Tortoise applies to the chase of the Tortoise by Achilles, and it would fail to represent the real process for the same reason. Namely, just as Achilles does not have to make the series of distinct endeavors which he is represented as making, so this process of forming the perceptual judgment, because it is subconscious and so not amenable to logical criticism, does not have to make separate acts of inference but performs its act in one continuous process.

II

I have already put in my brief in favor of my second cotary proposition, and in what I am about to say I shall treat that as already sufficiently proved. In arguing it I avoided all resort to anything like special phenomena, upon which I do not think that philosophy ought to rest, at all. Still, there is no harm in using special observations merely in an abductive way to throw a light upon doctrines otherwise established, and to aid the mind in grasping them; and

there are some phenomena which, I think, do aid us to see what is meant by asserting that perceptual judgments contain general elements, and which will also naturally lead up to a consideration of the third cotary proposition.

I will show you a figure which I remember my father drawing in one of his lectures. I do not remember what it was supposed to show; but I cannot imagine what else it could have been but my cotary proposition No. 2. If so, in maintaining that proposition I am substantially treading in his foot-prints, though he would doubtless have put the proposition into a shape very different from mine. Here is the figure (though I cannot draw it as skillfully as he did). It consists of a serpentine line. But when it is completely drawn, it appears to be a stone wall. The point is that

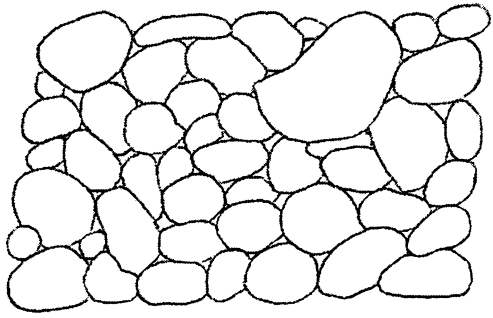

Figure 7

there are two ways of conceiving the matter. Both, I beg you to remark, are *general ways of classing the line*, general classes under which the line is subsumed. But the very decided preference of our perception for one mode of classing the percept shows that this classification is contained in the perceptual judgment. So it is with that well-known unshaded outline figure of a pair of steps seen in perspective. We seem at first to be looking at the steps from above; but some unconscious part of the mind seems to tire of putting that construction upon it and suddenly we seem to see the steps from below, and so the perceptive judgment and the percept itself seem to keep shifting from one general aspect to the other and back again.

In all such visual illusions, of which two or three dozen are well known, the most striking thing is that a certain theory of interpretation of the figure has all the appearance of being given in perception. The first time it is shown to us, it seems as completely beyond the control of rational criticism as any percept is; but after many repetitions of the now familiar experiment, the illusion wears off, becoming first less decided, and ultimately ceasing completely. This shows that these phenomena are true connecting links between abductions and perceptions.

If the percept or perceptual judgment were of a nature entirely unrelated to abduction, one would expect that the percept would be entirely free from any characters that are proper to *interpretations*, while it can hardly fail to have such characters if it be merely a continuous series of what discretely and consciously performed would be abductions. We have here then almost a crucial test of my third cotary proposition. Now, then, how is the fact? The fact is that it is not necessary to go beyond ordinary observations of common life to find a variety of widely different ways in which perception is interpretative.

The whole series of hypnotic phenomena, of which so many fall within the realm of ordinary everyday observation, – such as our waking up at the hour we wish to wake much nearer than our waking selves could guess it, – involve the fact that we perceive what we are adjusted for interpreting though it be far less perceptible than any express effort could enable us to perceive; while that to the interpretation of which our adjustments are not fitted, we fail to perceive although it exceed in intensity what we should perceive with the utmost ease if we cared at all for its interpretation. It is a marvel to me that the clock in my study strikes every half hour in the most audible manner, and yet I never hear it. I should not know at all whether the striking part were going, unless it is out of order and strikes the wrong hour. If it does that, I am pretty sure to hear it. Another familiar fact is that we perceive, or seem to perceive, objects differently from how they really are, accommodating them to their manifest intention. Proof-readers get high salaries because ordinary people miss seeing misprints, their eyes correcting them. We can repeat the *sense* of a conversation but we are often quite mistaken as to what words were uttered. Some politicians think it a clever thing to convey an idea which they carefully abstain from stating in words. The result is that a reporter is ready to swear quite sincerely that a politician said something to him which the politician was most careful not to say.

I should tire you if I dwelt further on anything so familiar, especially to every psychological student, as the interpretativeness of the perceptive judgment. It is plainly nothing but the extremest case of Abductive Judgment.

If this third cotary proposition be admitted, the second, that the perceptual judgment contains general elements, must be admitted; and as for the first, that all general elements are given in perception, that loses most of its significance. For if a general element were given otherwise than in the perceptual judgment, it could only first appear in an abductive suggestion, and that is now seen to amount substantially to the same thing. I not only opine, however, that every general element of every hypothesis, however wild or sophisticated it may be, is given somewhere in perception, but I will venture so far as to assert that every general *form* of putting concepts together is, in its elements, given in perception. In order to decide whether this be so or not, it is necessary to form a clear notion of the precise difference between

abductive judgment and the perceptual judgment which is its limiting case. The only symptom by which the two can be distinguished is that we cannot form the least conception of what it would be to deny the perceptual judgment. If I judge a perceptual image to be red, I can conceive of another man's not having that same percept. I can also conceive of his having this percept but never having thought whether it was red or not. I can conceive that while colors are among his sensations he shall never have had his attention directed to them. Or I can conceive that instead of redness a somewhat different conception should arise in his mind, that he should, for example, judge that this percept has a warmth of color. I can imagine that the redness of my percept is excessively faint and dim so that one can hardly make sure of whether it is red or not. But that any man should have a percept similar to mine and should ask himself the question whether this percept be *red*, which would imply that he had already judged *some* percept to be red, and that he should, upon careful attention to this percept, pronounce it to be decidedly and clearly *not* red, when I judge it to be prominently red, *that* I cannot comprehend at all. An abductive suggestion, however, is something whose truth *can* be questioned or even denied.

We thus come to the *test of inconceivability* as the only means of distinguishing between an abduction and a perceptual judgment. Now I fully assent to all that Stuart Mill so forcibly said in his *Examination of Hamilton* as to the utter untrustworthiness of the test of inconceivability. That which is inconceivable to us today, may prove tomorrow to be conceivable and even probable; so that we never can be absolutely sure that a judgment is perceptual and not abductive; and this may seem to constitute a difficulty in the way of satisfying ourselves that the first cotary proposition is true. At the same time, this difficulty will appear less serious when we remark that in regard to the vast majority of propositions of which men are in the habit of saying that their falsity is inconceivable, when we put the question in this form, "Is this directly perceived?", it will readily be proved that it is not perceived. For example, a man might say, "If I were to face precisely east and walk straight forward sixty steps and were then to turn to the right precisely through a right angle and were to walk straight forward fifty steps and then were to turn to the right precisely through a right angle and were to walk straight forward fifty steps and then were to turn to the right precisely through a right angle and were to walk straight forward until I was on the point of crossing my first path, I directly perceive that I should have to turn precisely through a right angle in order to walk over my previous path." A man, I say, might say that, but I should say to him, "You have, no doubt, been supposing that you would be walking on a level surface, although you did not explicitly say so. But it has probably not occurred to you that a level surface may have any shape whatever, according to the distribution of attracting masses. If you were facing due east on the earth's surface and were to walk straight forward along

the path of minimum length, when you had walked sixty paces you would no longer be facing due east but a little to the south of east, so that what you have been saying you perceived would not be the fact. Now then you wish to suppose you were walking on a plane surface. But what do you mean by a plane surface? If you mean one upon which what you are saying would be true, then of course, it is an identical proposition to say that it would be as you say. But if by a plane you mean a surface which, turned upside down, could be brought into exact coincidence with its former position throughout, then you must acknowledge that you do not evidently perceive any connection between this particular property of a plane surface and the property of a surface on which four right angles should make the quadrilateral close precisely."

In ways more or less like this, the class of cases in which abductions may be mistaken for perceptions can be considerably narrowed. Nevertheless, it must be acknowledged that this class of cases, however it may be restricted, is not thus eliminated. It may therefore very likely be objected that doubt must perforce on this account hang over my first cotary proposition that every general element of thought is given in perceptive judgment. This objection, however, involves a logical fallacy. No doubt in regard to the first cotary proposition follows as a necessary consequence of the possibility that what are really abductions have been mistaken for perceptions. For the question is whether that which really is an abductive result can contain elements foreign to its premisses. It must be remembered that abduction, although it is very little hampered by logical rules, nevertheless is logical inference, asserting its conclusion only problematically or conjecturally it is true, but nevertheless having a perfectly definite logical form.

Long before I first classed abduction as an inference it was recognized by logicians that the operation of adopting an explanatory hypothesis, – which is just what abduction is, – was subject to certain conditions. Namely, the hypothesis cannot be admitted, even as a hypothesis, unless it be supposed that it would account for the facts or some of them. The form of inference therefore is this:

> The surprising fact, *C*, is observed;
> But if *A* were true, *C* would be a matter of course.
> Hence, there is reason to suspect that *A* is true.

Thus, *A* cannot be abductively inferred, or if you prefer the expression, cannot be abductively conjectured, until its entire contents is already present in the premiss, "If *A* were true, *C* would be a matter of course."

Whether this be a correct account of the matter or not, the mere suggestion of it as a possibility shows that the bare fact that abductions may be mistaken for perceptions does not necessarily affect the force of an argument to show that quite new conceptions cannot be obtained from abduction.

But when the account just given of abduction is proposed as a proof that all conceptions must be given substantially in perception, three objections will be started. Namely, in the first place, it may be said that even if this be the normative form of abduction, the form to which abduction *ought* to conform, yet it may be that new conceptions arise in a manner which puts the rules of logic at defiance. In the second place, waiving this objection, it may be said that the argument would prove too much; for if it were valid, it would follow that no hypothesis could be so fantastic as not to have presented itself entire in experience. In the third place, it may be said that granting that the abductive conclusion "*A* is true" rests upon the premiss "If *A* is true, *C* is true," still it would be contrary to common knowledge to assert that the antecedents of all conditional judgments are given in perception, and thus it remains almost certain that some conceptions have a different origin.

In answer to the first of these objections, it is to be remarked that it is only in Deduction that there is no difference between a *valid* argument and a *strong* one. An argument is valid if it possesses the sort of strength that it professes and tends toward the establishment of the conclusion in the way in which it pretends to do this. But the question of its strength does not concern the comparison of the due effect of the argument with its pretensions, but simply rests upon how great its due effect is. An argument is nonetheless logical for being weak, provided it does not pretend to a strength that it does not possess. It is, I suppose, in view of this that the best modern logicians outside the English school never say a word about fallacies. They assume that there is no such thing as an argument illogical in itself. An argument is fallacious only so far as it is mistakenly, though not illogically, inferred to have professed what it did not perform. Perhaps it may be said that if all our reasonings conform to the laws of logic, this is, at any rate, nothing but a proposition in psychology which my principles ought to forbid my recognizing. But I do not offer it as a principle of psychology only. For a principle of psychology is a contingent truth, while this, as I contend, is a necessary truth. Namely, if a fallacy involves nothing in its conclusion which was not in its premisses, that is, nothing that was not in any previous knowledge that aided in suggesting it, then the forms of logic will invariably and necessarily enable us logically to account for it as due to a mistake arising from the use of a logical but weak argumentation. In most cases it is due to an abduction. The conclusion of an abduction is problematic or conjectural, but is not necessarily at the weakest grade of surmise, and what we call assertoric judgments are, accurately, problematic judgments of a high grade of hopefulness. There is therefore no difficulty in maintaining that fallacies are merely due to mistakes which are logically valid, though weak, argumentations. If, however, a fallacy contains something in the conclusion which was not in the premisses at all, that is, was in no previous knowledge or none that influenced the result, then again a mistake due as before to weak inference has been committed; only in

this case the mistake consists in taking that to be an inference which, in respect to this new element, is not an inference, at all. That part of the conclusion which inserts the wholly new element can be separated from the rest with which it has no logical connection nor appearance of logical connection. The first emergence of this new element into consciousness must be regarded as a perceptive judgment. We are irresistibly led to judge that we are conscious of it. But the connection of this perception with other elements must be an ordinary logical inference, subject to error like all inference.

As for the second objection that, according to my account of abduction, every hypothesis, however fantastic, must have presented itself entire in perception, I have only to say that this could only arise in a mind entirely unpracticed in the logic of relations, and apparently quite oblivious of any other mode of inference than abduction. Deduction accomplishes first the simple colligation of different perceptive judgments into a copulative whole, and then, with or without the aid of other modes of inference, is quite capable of so transforming this copulative proposition so as to bring certain of its parts into more intimate connection.

But the third objection is the really serious one. In it lies the whole nodus of the question and its full refutation would be quite a treatise. If the antecedent is not given in a perceptive judgment, then it must first emerge in the conclusion of an inference. At this point we are obliged to draw the distinction between the matter and the logical form. With the aid of the logic of relations it would be easy to show that the entire logical matter of a conclusion must in any mode of inference be contained, piecemeal, in the premisses. Ultimately therefore it must come from the uncontrolled part of the mind, because a series of controlled acts must have a first. But as to the logical *form*, it would be, at any rate, extremely difficult to dispose of it in the same way. An induction, for example, concludes in a ratio of frequency; but there is nothing about any such ratio in the single instances on which it is based. Where do the conceptions of deductive necessity, of inductive probability, of abductive expectability come from? Where does the conception of inference itself come from? That is the only difficulty. But self-control is the character which distinguishes reasoning from the processes by which perceptual judgments are formed, and self-control of any kind is purely *inhibitory*. It originates nothing.

Therefore it cannot be in the act of adoption of an inference, in the pronouncing of it to be reasonable, that the formal conceptions in question can first emerge. It must be in the first perceiving that so one might conceivably reason. And what is the nature of that? I see that I have instinctively described the phenomenon as a "perceiving." I do not wish to argue from words; but a word may furnish a valuable suggestion. What can our first acquaintance with an inference, when it is not yet adopted, be but a perception, – a perception of the world of ideas? In the first suggestion of it

the inference must be thought of as an inference, because when it is adopted there is always the thought that so one might reason in a whole class of cases. But the mere act of inhibition cannot introduce this conception. The inference must, then, be thought of as an inference in the first suggestion of it. Now when an inference is thought of *as* an inference, the conception of inference becomes a part of the *matter* of thought. Therefore, the same argument which we used in regard to matter in general applies to the conception of inference. But I am prepared to show in detail, and indeed virtually have shown, that all the forms of logic can be reduced to combinations of the conception of inference, the conception of otherness, and the conception of a character. These are obviously simply forms of Thirdness, Secondness, and Firstness of which the last two are unquestionably given in perception. Consequently the whole logical form of thought is so given in its elements.

III

It appears to me, then, that my three cotary propositions are satisfactorily grounded. Nevertheless, since others may not regard them as so certain as I myself do, I propose in the first instance to disregard them, and to show that, even if they are put aside as doubtful, a maxim practically little differing in most of its applications from that of pragmatism ought to be acknowledged and followed; and after this has been done, I will show how the recognition of the cotary propositions will affect the matter.

I have argued in several of my early papers that there are but three essentially different modes of reasoning: Deduction, Induction, and Abduction. I may mention in particular papers in the *Proceedings of the American Academy of Arts and Sciences* for April and May 1867. I must say, however, that it would be very easy to misunderstand those arguments. I did not at first fully comprehend them myself. I cannot restate the matter tonight, although I am very desirous of doing so, for I could now put it in a much clearer light. I have already explained to you briefly what these three modes of inference, Deduction, Induction, and Abduction, are. I ought to say that when I described induction as the experimental testing of a hypothesis, I was not thinking of experimentation in the narrow sense in which it is confined to cases in which we ourselves deliberately create the peculiar conditions under which we desire to study a phenomenon. I mean to extend it to every case in which, having ascertained by deduction that a theory would lead us to anticipate under certain circumstances phenomena contrary to what we should expect if the theory were *not* true, we examine the cases of that sort to see how far those predictions are borne out.

If you carefully consider the question of pragmatism you will see that it is nothing else than the question of the logic of abduction. That is, pragmatism proposes a certain maxim which, if sound, must render needless any further

rule as to the admissibility of hypotheses to rank as hypotheses, that is to say, as explanations of phenomena held as hopeful suggestions; and furthermore, this is *all* that the maxim of pragmatism really pretends to do, at least so far as it is confined to logic, and is not understood as a proposition in psychology. For the maxim of pragmatism is that a conception can have no logical effect or import differing from that of a second conception except so far as, taken in connection with other conceptions and intentions, it might conceivably modify our practical conduct differently from that second conception. Now it is indisputable that no rule of abduction would be admitted by *any* philosopher which should prohibit on any formalistic grounds any inquiry as to how we ought in consistency to shape our practical conduct. Therefore, a maxim which looks only to possibly practical considerations will not need any supplement in order to exclude any hypotheses as inadmissible. What hypothesis it admits all philosophers would agree ought to be admitted. On the other hand, if it be true that nothing but such considerations has any logical effect or import whatever, it is plain that the maxim of pragmatism cannot cut off any kind of hypothesis which ought to be admitted. Thus, the maxim of pragmatism, if true, fully *covers* the entire logic of abduction. It remains to inquire whether this maxim may not have some *further* logical effect. If so, it must in some way affect inductive or deductive inference. But that pragmatism cannot interfere with induction is evident; because induction simply teaches us what we have to expect as a result of experimentation, and it is plain that any such expectation *may* conceivably concern practical conduct. In a certain sense it *must* affect *deduction*. Anything which gives a rule to abduction and so puts a limit upon admissible hypotheses will cut down *the premisses* of deduction, and thereby will render a *reductio ad absurdum* and other equivalent forms of deduction possible which would not otherwise have been possible. But here three remarks may be made. First, to affect the *premisses* of deduction is not to affect the logic of deduction. For in the process of deduction itself no conception is introduced to which pragmatism could be supposed to object except the act of abstraction. Concerning that, I have only time to say that pragmatism ought not to object to it. Secondly, no effect of pragmatism which *is consequent upon its effect on abduction* can go to show that pragmatism is anything more than a doctrine concerning the logic of abduction. Thirdly, if pragmatism is the doctrine that every conception is a conception of conceivable practical effects, it makes conception reach far beyond the practical. It allows any flight of imagination, provided this imagination ultimately alights upon a possible practical effect, and thus many hypotheses may seem at first glance to be excluded by the pragmatical maxim that are not really so excluded.

IV

Admitting, then, that the Question of Pragmatism is the Question of Abduction, let us consider it under that form. What is good abduction? What should an explanatory hypothesis be to be worthy to rank as a hypothesis? Of course, it must explain the facts. But what other conditions ought it to fulfill to be good? The question of the goodness of anything is whether that thing fulfills its end. What, then, is the end of an explanatory hypothesis? Its end is, through subjection to the test of experiment, to lead to the avoidance of all surprise and to the establishment of a habit of positive expectation that shall not be disappointed. Any hypothesis, therefore, may be admissible, in the absence of any special reasons to the contrary, provided it be capable of experimental verification, and only in so far as it is capable of such verification. This is approximately the doctrine of pragmatism. But just here a broad question opens out before us. What are we to understand by experimental verification? The answer to that involves the whole logic of induction. Let me point out to you the different opinions which we actually find men holding today, – perhaps not consistently, but thinking that they hold them, – upon this subject.

In the first place, we find men who maintain that no hypothesis ought to be admitted, even as a hypothesis, any further than its truth or its falsity is *capable* of being directly perceived. This, as well as I can make out, is what was in the mind of Auguste Comte, who is generally assumed to have first formulated this maxim. Of course, this maxim of abduction supposes that, as people say, we "are to believe only what we actually see"; and there are well-known writers, and writers of no little intellectual force, who maintain that it is unscientific to make predictions, – unscientific, therefore, to expect anything. One ought to restrict one's opinions to what one actually perceives. I need hardly say that that position cannot be consistently maintained. It refutes itself; for it is *itself* an opinion relating to more than is actually in the field of momentary perception.

In the second place, there are those who hold that a theory which has sustained a number of experimental tests may be expected to sustain a number of other similar tests, and to have a general approximate truth, the justification of this being that this kind of inference must prove correct in the long run, as I explained in a previous lecture. But these logicians refuse to admit that we can ever have a right to conclude definitely that a hypothesis is *exactly* true, that is, that it should be able to sustain experimental tests in endless series; for, they urge, no hypothesis can be subjected to an endless series of tests. They are willing we should say that a theory is true, because, all our ideas being more or less vague and approximate, what we mean by saying that a theory is true can only be that it is very near true. But they will not allow us to say that anything put forth as an anticipation of experience should assert exactitude, because exactitude in experience would imply experiences in endless series, which is impossible.

In the third place, the great body of scientific men hold that it is too much to say that induction must be restricted to that for which there can be *positive* experimental evidence. They urge that the rationale of induction, as it is understood by logicians of the second group themselves, entitles us to hold a theory provided it be such that, if it involve any falsity, experiment must some day detect that falsity. We, therefore, have a right, they will say, to infer that something *never* will happen, provided it be of such a nature that it could not occur without being detected.

I wish to avoid in the present lecture *arguing* any such points, because the substance of all sound argumentation about pragmatism, has, as I conceive it, been already given in previous lectures, and there is no end to the forms in which it might be stated. I must, however, except from this statement the logical principles which I intend to state in tomorrow evening's lecture on multitude and continuity; and for the sake of making the relation clear between this third position and the fourth and fifth, I must anticipate a little what I shall further explain tomorrow.

What ought persons who hold this third position to say to the Achilles sophism? Or rather this is not precisely what I wish to inquire, but rather what would they be obliged to say as to Achilles overtaking the tortoise, Achilles and the tortoise being geometrical points, supposing that our only knowledge was derived inductively from observations of the relative positions of Achilles and the tortoise at those stages of the progress that the sophism supposes, and supposing that Achilles really moves twice as fast as the tortoise? They ought to say that *if* it could not happen that Achilles, in one of those stages of his progress, should at length reach a certain finite distance behind the tortoise which he would be unable to halve, *without our learning that fact*, then we should have a right to conclude that he could halve *every* distance and consequently that he could make his distance behind the tortoise less than *all* fractions having a power of two for the denominator. Therefore unless those logicians were to suppose a distance less than any measurable distance, which would be contrary to their principles, they would be obliged to say that Achilles could reduce his distance behind the tortoise to *zero*.

The reason why it would be contrary to their principles to admit any distance less than a measurable distance, is that their way of supporting induction implies that they differ from the logicians of the second class, in that these third-class logicians admit that we can infer a proposition implying an infinite multitude and therefore implying the reality of the infinite multitude itself, while their mode of justifying induction would exclude every infinite multitude except the lowest grade, that of the multitude of all integer numbers. Because with reference to a greater multitude than that, it would not be true that what did not occur in a finite ordinal place in a series could not occur anywhere within the infinite series, – which is the only reason they admit for the inductive conclusion.

But now let us look at something else that those logicians would be obliged to admit. Namely, suppose any regular polygon to have all its vertices joined by straight radii to its center. Then if there were any particular finite number of sides for a regular polygon with radii so drawn, which had the singular property that it should be impossible to bisect all the angles by new radii equal to the others and, by connecting the extremities of each new radius to those of the two adjacent old radii, to make a new polygon of double the number of angles, – if, I say, there were any *finite number* of sides for which this could not be done, it may be admitted that

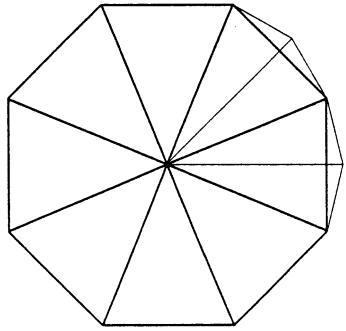

Figure 8

we should be able to find it out. The question I am asking supposes arbitrarily that they admit that. Therefore these logicians of the third class would have to admit that all such polygons could so have their sides doubled and that consequently there would be a polygon of an infinite multitude of sides which could be, on their principles, nothing else than the circle. But it is easily proved that the perimeter of that polygon, that is, the circumference of the circle, would be incommensurable, so that an incommensurable measure is real and thence it easily follows that all such lengths are real or possible. But these exceed in multitude the only multitude those logicians admit. Without any geometry, the same result could be reached, supposing only that we have an indefinitely bisectible quantity.

We are thus led to a fourth opinion very common among mathematicians, who generally hold that any one irrational real quantity, – say of length, for example, – whether algebraical or transcendental in its general expression, is just as possible and admissible as any rational quantity, but who generally reason that if the distance between two points is less than any assignable quantity, that is, less than any finite quantity, then it is nothing at all. If that be the case, it is possible for us to conceive, with mathematical precision, a state of things in favor of whose actual reality there would seem to be no

possible sound argument, however weak. For example, we can conceive that the diagonal of a square is incommensurable with its side. That is to say, if you first name any length commensurable with the side, the diagonal will differ from that by a finite quantity (and a commensurable quantity), yet however accurately we may measure the diagonal of an apparent square, there will always be a limit to our accuracy and the measure will always be commensurable. So we never could have any reason to think it otherwise. Moreover if there be, as they seem to hold, no other points on a line than such as are at distances assignable to an indefinite approximation, it will follow that if a line has an extremity, that extreme point may be conceived to be taken away, so as to leave the line without any extremity while leaving all the other points just as they were. In that case, all the points stand discrete and separate; and the line might be torn apart at any number of places without disturbing the relations of the points to one another. Each point has, on that view, its own independent existence, and there can be no merging of one into another. There is no continuity of points in the sense in which continuity implies generality.

In the fifth place it may be held that we can be justified in inferring true generality, true continuity. But I do not see in what way we ever can be justified in doing so unless we admit the cotary propositions, and in particular that such continuity is given in perception, that is, that whatever the underlying psychical process may be, we seem to perceive a genuine flow of time, such that instants melt into one another without separate individuality.

It would not be necessary for me to deny a psychical theory which should make this to be illusory in such sense as there can be in saying that anything beyond all logical criticism is illusory, but I confess I should strongly suspect that such a psychological theory involved a logical inconsistency; and at best it could do nothing at all toward solving the logical question.

V

There are two functions which we may properly require that Pragmatism should perform; or if not pragmatism, whatever the true doctrine of the Logic of Abduction may be ought to do these two services.

Namely, it ought, in the first place, to give us an expeditious riddance of all ideas essentially unclear. In the second place, it ought to lend support to, and help to render distinct, ideas essentially clear but more or less difficult of apprehension; and in particular, it ought to take a satisfactory attitude toward the element of thirdness.

Of these two offices of Pragmatism, there is at the present day not so crying a need of the first as there was a quarter of a century ago when I enunciated the maxim. The state of logical thought is very much improved. Thirty years ago when, in consequence of my study of the logic of relations,

I told philosophers that all conceptions ought to be defined, with the sole exception of the familiar concrete conceptions of everyday life, my opinion was considered in every school to be utterly incomprehensible. The doctrine then was, as it remains in nineteen out of every score of logical treatises that are appearing in these days, that there is no way of defining a term except by enumerating all its universal predicates, each of which is more abstracted and general than the term defined. So unless this process can go on endlessly, which was a doctrine little followed, the explication of a concept must stop at such ideas as Pure Being, Agency, Substance, and the like, which were held to be ideas so perfectly simple that no explanation whatever could be given of them. This grotesque doctrine was shattered by the logic of relations, which showed that the simplest conceptions, such as Quality, Relation, Self-consciousness, could be defined and that such definitions would be of the greatest service in dealing with them. By this time, although few really study the logic of relations, one seldom meets with a philosopher who continues to think the most general relations are particularly simple in any except a technical sense; and of course, the only alternative is to regard as the simplest the practically applied notions of familiar life. We should hardly find today a man of Kirchhoff's rank in science saying that we know exactly what energy *does* but what energy *is* we do not know in the least. For the answer would be that energy being a term in a dynamical equation, if we know how to apply that equation, we thereby know what energy is, although we may suspect that there is some more fundamental law underlying the laws of motion.

In the present situation of philosophy, it is far more important that Thirdness should be adequately dealt with by our logical maxim of abduction. The urgent pertinence of the question of thirdness, at this moment of the break-up of agnostic calm, when we see that the chief difference between philosophers is in regard to the extent to which they allow elements of thirdness a place in their theories, is too plain to be insisted upon.

I shall take it for granted that, as far as *thought* goes, I have sufficiently shown that thirdness is an element not reducible to secondness and firstness. But even if so much be granted, three attitudes may be taken:

1st, that thirdness, though an element of the mental phenomenon, ought not to be admitted into a theory of the real, because it is not experimentally verifiable;

2nd, that thirdness is experimentally verifiable, that is, is inferable by induction, although it cannot be directly perceived;

3rd, that it is directly perceived, from which the other cotary propositions can hardly be separated.

The man who takes the first position ought to admit no general law as really operative. Above all, therefore, he ought not to admit the law of laws, the law of the uniformity of nature. He ought to abstain from all prediction, however

qualified by a confession of fallibility. But that position can practically not be maintained.

The man who takes the second position will hold thirdness to be an addition which the operation of induction introduces over and above what its premisses in any way contain, and further that this element, though not perceived in experiment, is justified *by* experiment. Then his conception of reality must be such as completely to sunder the real from perception; and the puzzle for him will be why perception should be allowed such authority in regard to what is real.

I do not think that man can consistently hold that there is room in time for an event between any two events separate in time. But even if he could, he would (if he could grasp the reasoning) be forced to acknowledge that the contents of time consists of separate, independent, unchanging states, and nothing else. There would not be even a determinate order of sequence among these states. He might insist that one order of sequence was more readily grasped by us; but nothing more. Every man is fully satisfied that there is such a thing as truth, or he would not ask any question. *That* truth consists in a conformity to something *independent of his thinking it to be so*, or of any man's opinion on that subject. But for the man who holds this second opinion the only reality there could be would be conformity to the ultimate result of inquiry. But there would not be any course of inquiry possible except in the sense that it would be easier for him so to interpret the phenomenon; and ultimately he would be forced to say that there was no reality at all except that he now at this instant finds a certain way of thinking easier than any other. But that violates the very idea of reality and of truth.

The man who takes the third position and accepts the cotary propositions will hold with firmest of grasps to the recognition that logical criticism is limited to what we can control. In the future we may be able to control more but we must consider what we can now control. Some elements we can control in some limited measure. But the contents of the perceptual judgment cannot be sensibly controlled now, nor is there any rational hope that it ever can be. Concerning that quite uncontrolled part of the mind, logical maxims have as little to do as with the growth of hair and nails. We may be dimly able to see that in part it depends on the accidents of the moment, in part on what is personal or racial, in part on what is common to all nicely adjusted organisms whose equilibrium has narrow ranges of stability, in part on whatever is composed of vast collections of independently variable elements, in part on whatever reacts, and in part on whatever has any mode of being. But the sum of it all is that our logically controlled thoughts compose a small part of the mind, the mere blossom of a vast complexus which we may call the instinctive mind in which this man will not say that he has *faith* because that implies the conceivability of distrust, but upon which he builds as the very fact to which it is the whole business of his logic to be true.

That he will have no difficulty with Thirdness is clear enough, because he will hold that the conformity of action to general intentions is as much given in perception as is the element of action itself which cannot really be mentally torn away from such general purposiveness. There can be no doubt that he will allow hypotheses fully all the range they ought to be allowed. The only question will be whether he succeeds in excluding from hypotheses everything unclear and nonsensical. It will be asked whether he will not have a shocking leaning toward anthropomorphic conceptions? I fear I must confess that he will be inclined to see an anthropomorphic, or even a zoömorphic, if not a physiomorphic element in all our conceptions. But against unclear and nonsensical hypotheses, whatever aegis there may be in pragmatism will be more essentially significant for him than for any other logician for the reason that it is in action that logical energy returns to the uncontrolled and uncriticizable parts of the mind. His maxim will be this:

> The elements of every concept enter into logical thought at the gate of perception and make their exit at the gate of purposive action; and whatever cannot show its passports at both those two gates is to be arrested as unauthorized by reason.

The digestion of such thoughts is slow, ladies and gentlemen; but when you come in the future to reflect upon all that I have said, I am confident you will find the seven hours you have spent in listening to these ideas have not been altogether wasted.

WHAT PRAGMATISM IS

Charles S. Peirce. "What Pragmatism Is." *The Monist* 15.2 (April 1905): 161–181.

The writer of this article has been led by much experience to believe that every physicist, and every chemist, and, in short, every master in any department of experimental science, has had his mind moulded by his life in the laboratory to a degree that is little suspected. The experimentalist himself can hardly be fully aware of it, for the reason that the men whose intellects he really knows about are much like himself in this respect. With intellects of widely different training from his own, whose education has largely been a thing learned out of books, he will never become inwardly intimate, be he on ever so familiar terms with them; for he and they are as oil and water, and though they be shaken up together, it is remarkable how quickly they will go their several mental ways, without having gained more than a faint flavor from the association. Were those other men only to take skilful soundings of the experimentalist's mind, – which is just what they are unqualified to do, for the most part, – they would soon discover that, excepting perhaps upon topics where his mind is trammelled by personal feeling or by his bringing up, his disposition is to think of everything just as everything is thought of in the laboratory, that is, as a question of experimentation. Of course, no living man possesses in their fullness all the attributes characteristic of his type: it is not the typical doctor whom you will see every day driven in buggy or coupé, nor is it the typical pedagogue that will be met with in the first school-room you enter. But when you have found, or ideally constructed upon a basis of observation, the typical experimentalist, you will find that whatever assertion you may make to him, he will either understand as meaning that if a given prescription for an experiment ever can be and ever is carried out in act, an experience of a given description will result, or else he will see no sense at all in what you say. If you talk to him as Mr. Balfour talked not long ago to the British Association, saying that "the physicist seeks for something deeper than the laws connecting possible objects of experience," that "his object is a physical reality" unrevealed in experiments, and that the existence of such non-experiential reality "is the unalterable faith of science," to all such ontological meaning you will find the experimentalist mind to be color-blind. What adds to that confidence in this which the writer owes to his conversations with experimentalists is that he himself may almost be said to

have inhabited a laboratory from the age of six until long past maturity; and having all his life associated mostly with experimentalists, it has always been with a confident sense of understanding them and of being understood by them.

That laboratory life did not prevent the writer (who here and in what follows simply exemplifies the experimentalist type) from becoming interested in methods of thinking; and when he came to read metaphysics, although much of it seemed to him loosely reasoned and determined by accidental prepossessions, yet in the writings of some philosophers, especially Kant, Berkeley, and Spinoza, he sometimes came upon strains of thought that recalled the ways of thinking of the laboratory, so that he felt he might trust to them; all of which has been true of other laboratory-men.

Endeavoring, as a man of that type naturally would, to formulate what he so approved, he framed the theory that a *conception*, that is, the rational purport of a word or other expression, lies exclusively in its conceivable bearing upon the conduct of life; so that, since obviously nothing that might not result from experiment can have any direct bearing upon conduct, if one can define accurately all the conceivable experimental phenomena which the affirmation or denial of a concept could imply, one will have therein a complete definition of the concept, and *there is absolutely nothing more in it*. For this doctrine he invented the name *pragmatism*. Some of his friends wished him to call it *practicism* or *practicalism* (perhaps on the ground that *πρακτικός* is better Greek than *πραγματικός*). But for one who had learned philosophy out of Kant, as the writer, along with nineteen out of every twenty experimentalists who have turned to philosophy, had done, and who still thought in Kantian terms most readily, *praktisch* and *pragmatisch* were as far apart as the two poles, the former belonging in a region of thought where no mind of the experimentalist type can ever make sure of solid ground under his feet, the latter expressing relation to some definite human purpose. Now quite the most striking feature of the new theory was its recognition of an inseparable connection between rational cognition and rational purpose; and that consideration it was which determined the preference for the name *pragmatism*.

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Concerning the matter of philosophical nomenclature, there are a few plain considerations, which the writer has for many years longed to submit to the deliberate judgment of those few fellow-students of philosophy, who deplore the present state of that study, and who are intent upon rescuing it therefrom and bringing it to a condition like that of the natural sciences, where investigators, instead of contemning each the work of most of the others as misdirected from beginning to end, co-operate, stand upon one another's shoulders,

and multiply incontestable results; where every observation is repeated, and isolated observations go for little; where every hypothesis that merits attention is subjected to severe but fair examination, and only after the predictions to which it leads have been remarkably borne out by experience is trusted at all, and even then only provisionally; where a radically false step is rarely taken, even the most faulty of those theories which gain wide credence being true in their main experiential predictions. To those students, it is submitted that no study can become scientific in the sense described, until it provides itself with a suitable technical nomenclature, whose every term has a single definite meaning universally accepted among students of the subject, and whose vocables have no such sweetness or charms as might tempt loose writers to abuse them, – which is a virtue of scientific nomenclature too little appreciated. It is submitted that the experience of those sciences which have conquered the greatest difficulties of terminology, which are unquestionably the taxonomic sciences, chemistry, mineralogy, botany, zoölogy, has conclusively shown that the only way in which the requisite unanimity and requisite ruptures with individual habits and preferences can be brought about is so to shape the canons of terminology that they shall gain the support of *moral principle* and of every man's sense of decency; and that, in particular (under defined restrictions), the general feeling shall be that he who introduces a new conception into philosophy is under an obligation to invent acceptable terms to express it, and that when he has done so, the duty of his fellow-students is to accept those terms, and to resent any wresting of them from their original meanings, as not only a gross discourtesy to him to whom philosophy was indebted for each conception, but also as an injury to philosophy itself; and furthermore, that once a conception has been supplied with suitable and sufficient words for its expression, no other *technical* terms denoting the same things, considered in the same relations, should be countenanced. Should this suggestion find favor, it might be deemed needful that the philosophians in congress assembled should adopt, after due deliberation, convenient canons to limit the application of the principle. Thus, just as is done in chemistry, it might be wise to assign fixed meanings to certain prefixes and suffixes. For example, it might be agreed, perhaps, that the prefix *prope-* should mark a broad and rather indefinite extension of the meaning of the term to which it was prefixed; the name of a doctrine would naturally end in *-ism*, while *-icism* might mark a more strictly defined acception of that doctrine, etc. Then again, just as in biology no account is taken of terms antedating Linnæus, so in philosophy it might be found best not to go back of the scholastic terminology. To illustrate another sort of limitation, it has probably never happened that any philosopher has attempted to give a general name to his own doctrine without that name's soon acquiring, in common philosophical usage, a signification much broader than was originally intended. Thus, special systems go by the names Kantianism, Benthamism, Comtianism,

Spencerianism, etc., while transcendentalism, utilitarianism, positivism, evolutionism, synthetic philosophy, etc., have irrevocably and very conveniently been elevated to broader governments.

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After awaiting in vain, for a good many years, some particularly opportune conjuncture of circumstances that might serve to recommend his notions of the ethics of terminology, the writer has now, at last, dragged them in over head and shoulders, on an occasion when he has no specific proposal to offer nor any feeling but satisfaction at the course usage has run without any canons or resolutions of a congress. His word "pragmatism" has gained general recognition in a generalised sense that seems to argue power of growth and vitality. The famed psychologist, James, first took it up, seeing that his "radical empiricism" substantially answered to the writer's definition of pragmatism, albeit with a certain difference in the point of view. Next, the admirably clear and brilliant thinker, Mr. Ferdinand C. S. Schiller, casting about for a more attractive name for the "anthropomorphism" of his *Riddles of the Sphinx*, lit, in that most remarkable paper of his on "Axioms as Postulates," upon the same designation "pragmatism," which in its original sense was in generic agreement with his own doctrine, for which he has since found the more appropriate specification "humanism," while he still retains "pragmatism" in a somewhat wider sense. So far all went happily. But at present, the word begins to be met with occasionally in the literary journals, where it gets abused in the merciless way that words have to expect when they fall into literary clutches. Sometimes the manners of the British have efflo-resced in scolding at the word as ill-chosen, – ill-chosen, that is, to express some meaning that it was rather designed to exclude. So then, the writer, finding his bantling "pragmatism" so promoted, feels that it is time to kiss his child good-by and relinquish it to its higher destiny; while to serve the precise purpose of expressing the original definition, he begs to announce the birth of the word "pragmaticism," which is ugly enough to be safe from kidnappers.[1]

Much as the writer has gained from the perusal of what other pragmatists have written, he still thinks there is a decisive advantage in his original conception of the doctrine. From this original form every truth that follows

[1] To show how recent the general use of the word "pragmatism" is, the writer may mention that, to the best of his belief, he never used it in copy for the press before to-day, except by particular request, in *Baldwin's Dictionary*. Toward the end of 1890, when this part of the *Century Dictionary* appeared, he did not deem that the word had sufficient status to appear in that work. But he has used it continually in philosophical conversation since, perhaps, the mid-seventies.

from any of the other forms can be deduced, while some errors can be avoided into which other pragmatists have fallen. The original view appears, too, to be a more compact and unitary conception than the others. But its capital merit, in the writer's eyes, is that it more readily connects itself with a critical proof of its truth. Quite in accord with the logical order of investigation, it usually happens that one first forms an hypothesis that seems more and more reasonable the further one examines into it, but that only a good deal later gets crowned with an adequate proof. The present writer having had the pragmatist theory under consideration for many years longer than most of its adherents, would naturally have given more attention to the proof of it. At any rate, in endeavoring to explain pragmatism, he may be excused for confining himself to that form of it that he knows best. In the present article there will be space only to explain just what this doctrine (which, in such hands as it has now fallen into, may probably play a pretty prominent part in the philosophical discussions of the next coming years) really consists in. Should the exposition be found to interest readers of *The Monist*, they would certainly be much more interested in a second article which would give some samples of the manifold applications of pragmaticism (assuming it to be true) to the solution of problems of different kinds. After that, readers might be prepared to take an interest in a proof that the doctrine is true, – a proof which seems to the writer to leave no reasonable doubt on the subject, and to be the one contribution of value that he has to make to philosophy. For it would essentially involve the establishment of the truth of synechism.

The bare definition of pragmaticism could convey no satisfactory comprehension of it to the most apprehensive of minds, but requires the commentary to be given below. Moreover, this definition takes no notice of one or two other doctrines without the previous acceptance (or virtual acceptance) of which pragmaticism itself would be a nullity. They are included as a part of the pragmatism of Schiller, but the present writer prefers not to mingle different propositions. The preliminary propositions had better be stated forthwith.

The difficulty in doing this is that no formal list of them has ever been made. They might all be included under the vague maxim, "Dismiss make-believes." Philosophers of very diverse stripes propose that philosophy shall take its start from one or another state of mind in which no man, least of all a beginner in philosophy, actually is. One proposes that you shall begin by doubting everything, and says that there is only one thing that you cannot doubt, as if doubting were "as easy as lying." Another proposes that we should begin by observing "the first impressions of sense," forgetting that our very percepts are the results of cognitive elaboration. But in truth, there is but one state of mind from which you can "set out," namely, the very state of mind in which you actually find yourself at the time you do "set out," – a state in which you are laden with an immense mass of cognition already formed, of which you

cannot divest yourself if you would; and who knows whether, if you could, you would not have made all knowledge impossible to yourself? Do you call it *doubting* to write down on a piece of paper that you doubt? If so, doubt has nothing to do with any serious business. But do not make believe; if pedantry has not eaten all the reality out of you, recognise, as you must, that there is much that you do not doubt, in the least. Now that which you do not at all doubt, you must and do regard as infallible, absolute truth. Here breaks in Mr. Make Believe: "What! Do you mean to say that one is to believe what is not true, or that what a man does not doubt is *ipso facto* true?" No, but unless he can make a thing white and black at once, *he* has to regard what he does not doubt as absolutely true. Now you, *per hypothesis*, are that man. "But you tell me there are scores of things I do not doubt. I really cannot persuade myself that there is not some one of them about which I am mistaken." You are adducing one of your make-believe facts, which, even if it were established, would only go to show that doubt has a *limen*, that is, is only called into being by a certain finite stimulus. You only puzzle yourself by talking of this metaphysical "truth" and metaphysical "falsity," that you know nothing about. All you have any dealings with are your doubts and beliefs,[2] with the course of life that forces new beliefs upon you and gives you power to doubt old beliefs. If your terms "truth" and "falsity" are taken in such senses as to be definable in terms of doubt and belief and the course of experience (as for example they would be, if you were to define the "truth" as that to a belief in which belief would tend if it were to tend indefinitely toward absolute fixity), well and good: in that case, you are only talking about doubt and belief. But if by truth and falsity you mean something not definable in terms of doubt and belief in any way, then you are talking of entities of whose existence you can know nothing, and which Ockham's razor would clean shave off. Your problems would be greatly simplified, if, instead of saying that you want to know the "Truth," you were simply to say that you want to attain a state of belief unassailable by doubt.

Belief is not a momentary mode of consciousness; it is a habit of mind essentially enduring for some time, and mostly (at least) unconscious; and like other habits, it is (until it meets with some surprise that begins its dissolution) perfectly self-satisfied. Doubt is of an altogether contrary genus. It is not a habit, but the privation of a habit. Now a privation of a habit, in order to be anything at all, must be a condition of erratic activity that in some way must get superseded by a habit.

[2] It is necessary to say that "belief" is throughout used merely as the name of the contrary to doubt, without regard to grades of certainty nor to the nature of the proposition held for true, i.e. "believed."

Among the things which the reader, as a rational person, does not doubt, is that he not merely has habits, but also can exert a measure of self-control over his future actions; which means, however, *not* that he can impart to them any arbitrarily assignable character, but, on the contrary, that a process of self-preparation will tend to impart to action (when the occasion for it shall arise) one fixed character, which is indicated and perhaps roughly measured by the absence (or slightness) of the feeling of self-reproach, which subsequent reflection will induce. Now, this subsequent reflection is part of the self-preparation for action on the next occasion. Consequently, there is a tendency, as action is repeated again and again, for the action to approximate indefinitely toward the perfection of that fixed character, which would be marked by entire absence of self-reproach. The more closely this is approached, the less room for self-control there will be; and where no self-control is possible there will be no self-reproach.

These phenomena seem to be the fundamental characteristics which distinguish a rational being. Blame, in every case, appears to be a modification, often accomplished by a transference, or "projection," of the primary feeling of self-reproach. Accordingly, we never blame anybody for what had been beyond his power of previous self-control. Now, thinking is a species of conduct which is largely subject to self-control. In all their features (which there is no room to describe here), logical self-control is a perfect mirror of ethical self-control, – unless it be rather a species under that genus. In accordance with this, what you cannot in the least help believing is not, justly speaking, wrong belief. In other words, for you it is the absolute truth. True, it is conceivable that what you cannot help believing to-day, you might find you thoroughly disbelieve to-morrow. But then there is a certain distinction between things you "cannot" do merely in the sense that nothing stimulates you to the great effort and endeavors that would be required, and things you cannot do because in their own nature they are insusceptible of being put into practice. In every stage of your excogitations, there is something of which you can only say, "I cannot think otherwise," and your experientially based hypothesis is that the impossibility is of the second kind.

There is no reason why "thought," in what has just been said, should be taken in that narrow sense in which silence and darkness are favorable to thought. It should rather be understood as covering all rational life, so that an experiment shall be an operation of thought. Of course, that ultimate state of habit to which the action of self-control ultimately tends, where no room is left for further self-control, is, in the case of thought, the state of fixed belief, or perfect knowledge.

Two things here are all-important to assure oneself of and to remember. The first is that a person is not absolutely an individual. His thoughts are what he is "saying to himself," that is, is saying to that other self that is just coming into life in the flow of time. When one reasons, it is that critical self

that one is trying to persuade; and all thought whatsoever is a sign, and is mostly of the nature of language. The second thing to remember is that the man's circle of society (however widely or narrowly this phrase may be understood) is a sort of loosely compacted person, in some respects of higher rank than the person of an individual organism. It is these two things alone that render it possible for you, – but only in the abstract, and in a Pickwickian sense, – to distinguish between absolute truth and what you do not doubt.

Let us now hasten to the exposition of pragmaticism itself. Here it will be convenient to imagine that somebody to whom the doctrine is new, but of rather preternatural perspicacity, asks questions of a pragmaticist. Everything that might give a dramatic illusion must be stripped off, so that the result will be a sort of cross between a dialogue and a catechism, but a good deal liker the latter, – something rather painfully reminiscent of Mangnall's *Historical Questions*.

Questioner: I am astounded at your definition of your pragmatism, because only last year I was assured by a person above all suspicion of warping the truth, – himself a pragmatist, – that your doctrine precisely was "that a conception is to be tested by its practical effects." You must surely, then, have entirely changed your definition very recently.

Pragmaticist: If you will turn to Vols. VI and VII of the *Revue Philosophique*, or to the *Popular Science Monthly* for November 1877 and January 1878, you will be able to judge for yourself whether the interpretation you mention was not then clearly excluded. The exact wording of the English enunciation (changing only the first person into the second) was: "Consider what effects that might conceivably have practical bearings you conceive the object of your conception to have. Then your conception of those effects is the WHOLE of your conception of the object."

Questioner: Well, what reason have you for asserting that this is so?

Pragmaticist: That is what I specially desire to tell you. But the question had better be postponed until you clearly understand what those reasons profess to prove.

Questioner: What, then, is the *raison d'être* of the doctrine? What advantage is expected from it?

Pragmaticist: It will serve to show that almost every proposition of ontological metaphysics is either meaningless gibberish, – one word being defined by other words, and they by still others, without any real conception ever being reached, – or else is downright absurd; so that all such rubbish being swept away, what will remain of philosophy will be a series of problems capable of investigation by the observational methods of the true sciences, – the truth about which can be reached without those interminable misunderstandings and disputes which have made the highest of the positive sciences a mere amusement for idle intellects, a sort of chess, – idle pleasure its purpose, and reading out of a book its method. In this regard, pragmaticism

is a species of prope-positivism. But what distinguishes it from other species is, first, its retention of a purified philosophy; secondly, its full acceptance of the main body of our instinctive beliefs; and thirdly, its strenuous insistence upon the truth of scholastic realism (or a close approximation to that, well-stated by the late Dr. Francis Ellingwood Abbot in the Introduction to his *Scientific Theism*). So, instead of merely jeering at metaphysics, like other prope-positivists, whether by long drawn-out parodies or otherwise, the pragmaticist extracts from it a precious essence, which will serve to give life and light to cosmology and physics. At the same time, the moral applications of the doctrine are positive and potent; and there are many other uses of it not easily classed. On another occasion, instances may be given to show that it really has these effects.

Questioner: I hardly need to be convinced that your doctrine would wipe out metaphysics. Is it not as obvious that it must wipe out every proposition of science and everything that bears on the conduct of life? For you say that the only meaning that, for you, any assertion bears is that a certain experiment has resulted in a certain way: Nothing else but an experiment enters into the meaning. Tell me, then, how can an experiment, in itself, reveal anything more than that something once happened to an individual object and that subsequently some other individual event occurred?

Pragmaticist: That question is, indeed, to the purpose, – the purpose being to correct any misapprehensions of pragmaticism. You speak of an experiment in itself, emphasising "*in itself*." You evidently think of each experiment as isolated from every other. It has not, for example, occurred to you, one might venture to surmise, that every connected series of experiments constitutes a single collective experiment. What are the essential ingredients of an experiment? First, of course, an experimenter of flesh and blood. Secondly, a verifiable hypothesis. This is a proposition[3] relating to the universe environing the experimenter, or to some well-known part of it and affirming or denying of this only some experimental possibility or impossibility. The third indispensable ingredient is a sincere doubt in the experimenter's mind as to the truth of that hypothesis. Passing over several ingredients on which we need not dwell, the purpose, the plan, and the resolve, we come to the act of choice by which the experimenter singles out certain identifiable objects to be operated upon. The next is the external (or quasi-external) ACT by which

[3] The writer, like most English logicians, invariably uses the word *proposition*, not as the Germans define their equivalent, *Satz*, as the language-expression of a judgment *(Urtheil)*, but as that which is related to any assertion, whether mental and self-addressed or outwardly expressed, just as any possibility is related to its actualisation. The difficulty of the, at best, difficult problem of the essential nature of a Proposition has been increased, for the Germans, by their *Urtheil*, confounding, under one designation, the mental *assertion* with the *assertible*.

he modifies those objects. Next, comes the subsequent *reaction* of the world upon the experimenter in a perception; and finally, his recognition of the teaching of the experiment. While the two chief parts of the event itself are the action and the reaction, yet the unity of essence of the experiment lies in its purpose and plan, the ingredients passed over in the enumeration.

Another thing: in representing the pragmaticist as making rational meaning to consist in an experiment (which you speak of as an event in the past), you strikingly fail to catch his attitude of mind. Indeed, it is not in an experiment, but in *experimental phenomena*, that rational meaning is said to consist. When an experimentalist speaks of a *phenomenon*, such as "Hall's phenomenon," "Zeeman's phenomenon" and its modification, "Michelson's phenomenon," or "the chess-board phenomenon," he does not mean any particular event that did happen to somebody in the dead past, but what *surely will* happen to everybody in the living future who shall fulfil certain conditions. The phenomenon consists in the fact that when an experimentalist shall come to *act* according to a certain scheme that he has in mind, then will something else happen, and shatter the doubts of sceptics, like the celestial fire upon the altar of Elijah.

And do not overlook the fact that the pragmaticist maxim says nothing of single experiments or of single experimental phenomena (for what is conditionally true *in futuro* can hardly be singular), but only speaks of *general kinds* of experimental phenomena. Its adherent does not shrink from speaking of general objects as real, since whatever is true represents a real. Now the laws of nature are true.

The rational meaning of every proposition lies in the future. How so? The meaning of a proposition is itself a proposition. Indeed, it is no other than the very proposition of which it is the meaning: it is a translation of it. But of the myriads of forms into which a proposition may be translated, what is that one which is to be called its very meaning? It is, according to the pragmaticist, that form in which the proposition becomes applicable to human conduct, not in these or those special circumstances, nor when one entertains this or that special design, but that form which is most directly applicable to self-control under every situation, and to every purpose. This is why he locates the meaning in future time; for future conduct is the only conduct that is subject to self-control. But in order that that form of the proposition which is to be taken as its meaning should be applicable to every situation and to every purpose upon which the proposition has any bearing, it must be simply the general description of all the experimental phenomena which the assertion of the proposition virtually predicts. For an experimental phenomenon is the fact asserted by the proposition that action of a certain description will have a certain kind of experimental result; and experimental results are the only results that can affect human conduct. No doubt, some unchanging idea may come to influence a man more than it had done; but only because some

experience equivalent to an experiment has brought its truth home to him more intimately than before. Whenever a man acts purposively, he acts under a belief in some experimental phenomenon. Consequently, the sum of the experimental phenomena that a proposition implies makes up its entire bearing upon human conduct. Your question, then, of how a pragmaticist can attribute any meaning to any assertion other than that of a single occurrence is substantially answered.

Questioner: I see that pragmaticism is a thorough-going phenomenalism. Only why should you limit yourself to the phenomena of experimental science rather than embrace all observational science? Experiment, after all, is an uncommunicative informant. It never expatiates: it only answers "yes" or "no"; or rather it usually snaps out "No!" or, at best, only utters an inarticulate grunt for the negation of its "no." The typical experimentalist is not much of an observer. It is the student of natural history to whom nature opens the treasury of her confidence, while she treats the cross-examining experimentalist with the reserve he merits. Why should your phenomenalism sound the meagre jews-harp of experiment rather than the glorious organ of observation?

Pragmaticist: Because pragmaticism is not definable as "thorough-going phenomenalism," although the latter doctrine may be a kind of pragmatism. The *richness* of phenomena lies in their sensuous quality. Pragmaticism does not intend to define the phenomenal equivalents of words and general ideas, but, on the contrary, eliminates their sential element, and endeavors to define the rational purport, and this it finds in the purposive bearing of the word or proposition in question.

Questioner: Well, if you choose so to make Doing the Be-all and the End-all of human life, why do you not make meaning to consist simply in doing? Doing has to be done at a certain time upon a certain object. Individual objects and single events cover all reality, as everybody knows, and as a practicalist ought to be the first to insist. Yet, your meaning, as you have described it, is *general*. Thus, it is of the nature of a mere word and not a reality. You say yourself that your meaning of a proposition is only the same proposition in another dress. But a practical man's meaning is the very thing he means. What do you make to be the meaning of "George Washington"?

Pragmaticist: Forcibly put! A good half dozen of your points must certainly be admitted. It must be admitted, in the first place, that if pragmaticism really made Doing to be the Be-all and the End-all of life, that would be its death. For to say that we live for the mere sake of action, as action, regardless of the thought it carries out, would be to say that there is no such thing as rational purport. Secondly, it must be admitted that every proposition professes to be true of a certain real individual object, often the environing universe. Thirdly, it must be admitted that pragmaticism fails to furnish any translation or meaning of a proper name, or other designation of an individual object.

Fourthly, the pragmaticistic meaning is undoubtedly general; and it is equally indisputable that the general is of the nature of a word or sign. Fifthly, it must be admitted that individuals alone exist; and sixthly, it may be admitted that the very meaning of a word or significant object ought to be the very essence or reality of what it signifies. But when, those admissions having been unreservedly made, you find the pragmaticist still constrained most earnestly to deny the force of your objection, you ought to infer that there is some consideration that has escaped you. Putting the admissions together, you will perceive that the pragmaticist grants that a proper name (although it is not customary to say that it has a *meaning*) has a certain denotative function peculiar, in each case, to that name and its equivalents; and that he grants that every assertion contains such a denotative or pointing-out function. In its peculiar individuality, the pragmaticist excludes this from the rational purport of the assertion, although *the like* of it, being common to all assertions, and so, being general and not individual, may enter into the pragmaticistic purport. Whatever exists, *ex-sists*, that is, really acts upon other existents, so obtains a self-identity, and is definitely individual. As to the general, it will be a help to thought to notice that there are two ways of being general. A statue of a soldier on some village monument, in his overcoat and with his musket, is for each of a hundred families the image of its uncle, its sacrifice to the union. That statue, then, though it is itself single, represents any one man of whom a certain predicate may be true. It is *objectively* general. The word "soldier," whether spoken or written, is general in the same way; while the name, "George Washington," is not so. But each of these two terms remains one and the same noun, whether it be spoken or written, and whenever and wherever it be spoken or written. This noun is not an existent thing: it is a *type*, or *form*, to which objects, both those that are externally existent and those which are imagined, may *conform*, but which none of them can exactly be. This is subjective generality. The pragmaticistic purport is general in both ways.

As to reality, one finds it defined in various ways; but if that principle of terminological ethics that was proposed be accepted, the equivocal language will soon disappear. For *realis* and *realitas* are not ancient words. They were invented to be terms of philosophy in the thirteenth century, and the meaning they were intended to express is perfectly clear. That is *real* which has such and such characters, whether anybody thinks it to have those characters or not. At any rate, that is the sense in which the pragmaticist uses the word. Now, just as conduct controlled by ethical reason tends toward fixing certain habits of conduct, the nature of which (as to illustrate the meaning, peaceable habits and not quarrelsome habits) does not depend upon any accidental circumstances, and *in that sense*, may be said to be *destined*; so, thought, controlled by a rational experimental logic, tends to the fixation of certain opinions, equally destined, the nature of which will be the same in the end,

however the perversity of thought of whole generations may cause the postponement of the ultimate fixation. If this be so, as every man of us virtually assumes that it is, in regard to each matter the truth of which he seriously discusses, then, according to the adopted definition of "real," the state of things which will be believed in that ultimate opinion is real. But, for the most part, such opinions will be general. Consequently, *some* general objects are real. (Of course, nobody ever thought that *all* generals were real; but the scholastics used to assume that generals were real when they had hardly any, or quite no, experiential evidence to support their assumption; and their fault lay just there, and not in holding that generals could be real.) One is struck with the inexactitude of thought even of analysts of power, when they touch upon modes of being. One will meet, for example, the virtual assumption that what is relative to thought cannot be real. But why not, exactly? *Red* is relative to sight, but the fact that this or that is in that relation to vision that we call being red is not *itself* relative to sight; it is a real fact.

Not only may generals be real, but they may also be *physically efficient*, not in every metaphysical sense, but in the common-sense acception in which human purposes are physically efficient. Aside from metaphysical nonsense, no sane man doubts that if I feel the air in my study to be stuffy, that thought may cause the window to be opened. My thought, be it granted, was an individual event. But what determined it to take the particular determination it did was in part the general fact that stuffy air is unwholesome, and in part other *Forms*, concerning which Dr. Carus has caused so many men to reflect to advantage, – or rather, *by* which, and the general truth concerning which Dr. Carus's mind was determined to the forcible enunciation of so much truth. For truths, on the average, have a greater tendency to get believed than falsities have. Were it otherwise, considering that there are myriads of false hypotheses to account for any given phenomenon, against one sole true one (or if you will have it so, against every true one), the first step toward genuine knowledge must have been next door to a miracle. So, then, when my window was opened, because of the truth that stuffy air is malsain, a physical effort was brought into existence by the efficiency of a general and non-existent truth. This has a droll sound because it is unfamiliar; but exact analysis is with it and not against it; and it has, besides, the immense advantage of not blinding us to great facts, – such as that the ideas "justice" and "truth" are, notwithstanding the iniquity of the world, the mightiest of the forces that move it. Generality is, indeed, an indispensable ingredient of reality; for mere individual existence or actuality without any regularity whatever is a nullity. Chaos is pure nothing.

That which any true proposition asserts is *real*, in the sense of being as it is regardless of what you or I may think about it. Let this proposition be a general conditional proposition as to the future, and it is a real general such as is calculated really to influence human conduct; and such the pragmaticist holds to be the rational purport of every concept.

Accordingly, the pragmaticist does not make the *summum bonum* to consist in action, but makes it to consist in that process of evolution whereby the existent comes more and more to embody those generals which were just now said to be *destined*, which is what we strive to express in calling them *reasonable*. In its higher stages, evolution takes place more and more largely through self-control, and this gives the pragmaticist a sort of justification for making the rational purport to be general.

There is much more in elucidation of pragmaticism that might be said to advantage, were it not for the dread of fatiguing the reader. It might, for example, have been well to show clearly that the pragmaticist does not attribute any different essential mode of being to an event in the future from that which he would attribute to a similar event in the past, but only that the practical attitude of the thinker toward the two is different. It would also have been well to show that the pragmaticist does not make Forms to be the *only* realities in the world, any more than he makes the reasonable purport of a word to be the only kind of meaning there is. These things are, however, implicitly involved in what has been said. There is only one remark concerning the pragmaticist's conception of the relation of his formula to the first principles of logic which need detain the reader.

Aristotle's definition of universal predication, which is usually designated (like a papal bull or writ of court, from its opening words) as the *Dictum de omni*, may be translated as follows: "We call a predication (be it affirmative or negative) *universal*, when, and only when, there is nothing among the existent individuals to which the subject affirmatively belongs, but to which the predicate will not likewise be referred (affirmatively or negatively, according as the universal predication is affirmative or negative)." The Greek is: *λέγομεν δὲ τὸ κατὰ παντὸς κατηγορεῖσθαι ὅταν μηδὲν ᾖ λαβεῖν τῶν τοῦ ὑποκειμένου καθ' οὗ θάτερον οὐ λεχθήσεται· καὶ τὸ κατὰ μηδενὸς ὡσαύτως*. The important words "existent individuals" have been introduced into the translation (which English idiom would not here permit to be literal); but it is plain that existent individuals were what Aristotle meant. The other departures from literalness only serve to give modern English forms of expression. Now, it is well known that propositions in formal logic go in pairs, the two of one pair being convertible into another by the interchange of the ideas of antecedent and consequent, subject and predicate, etc. The parallelism extends so far that it is often assumed to be perfect; but it is not quite so. The proper mate of this sort to the *Dictum de omni* is the following definition of affirmative predication: We call a predication *affirmative* (be it universal or particular) when, and only when, there is nothing among the sensational effects that belong universally to the predicate which will not be (universally or particularly, according as the affirmative predication is universal or particular) said to belong to the subject. Now, this is substantially the essential propo-

sition of pragmaticism. Of course, its parallelism to the *Dictum de omni* will only be admitted by a person who admits the truth of pragmaticism.

* * *

Suffer me to add one word more on this point. For if one cares at all to know what the pragmaticist theory consists in, one must understand that there is no other part of it to which the pragmaticist attaches quite as much importance as he does to the recognition in his doctrine of the utter inadequacy of action or volition or even of resolve or actual purpose, as materials out of which to construct a conditional purpose or the concept of conditional purpose. Had a purposed article concerning the principle of continuity and synthetising the ideas of the other articles of a series in the early volumes of *The Monist* ever been written, it would have appeared how, with thorough consistency, that theory involved the recognition that continuity is an indispensable element of reality, and that continuity is simply what generality becomes in the logic of relatives, and thus, like generality, and more than generality, is an affair of thought, and is the essence of thought. Yet even in its truncated condition, an extra-intelligent reader might discern that the theory of those cosmological articles made reality to consist in something more than feeling and action could supply, inasmuch as the primeval chaos, where those two elements were present, was explicitly shown to be pure nothing. Now, the motive for alluding to that theory just here is, that in this way one can put in a strong light a position which the pragmaticist holds and must hold, whether that cosmological theory be ultimately sustained or exploded, namely, that the third category, – the category of thought, representation, triadic relation, mediation, genuine thirdness, thirdness as such, – is an essential ingredient of reality, yet does not by itself constitute reality, since this category (which in that cosmology appears as the element of habit) can have no concrete being without action, as a separate object on which to work its government, just as action cannot exist without the immediate being of feeling on which to act. The truth is that pragmaticism is closely allied to the Hegelian absolute idealism, from which, however, it is sundered by its vigorous denial that the third category (which Hegel degrades to a mere stage of thinking) suffices to make the world, or is even so much as self-sufficient. Had Hegel, instead of regarding the first two stages with his smile of contempt, held on to them as independent or distinct elements of the triune Reality, pragmaticists might have looked up to him as the great vindicator of their truth. (Of course, the external trappings of his doctrine are only here and there of much significance.) For pragmaticism belongs essentially to the triadic class of philosophical doctrines, and is much more essentially so than Hegelianism is. (Indeed, in one passage, at least, Hegel alludes to the triadic form of his exposition as to a mere fashion of dress.)

POSTSCRIPT. During the last five months, I have met with references to several objections to the above opinions, but not having been able to obtain the text of these objections, I do not think I ought to attempt to answer them. If gentlemen who attack either pragmatism in general or the variety of it which I entertain would only send me copies of what they write, more important readers they could easily find, but they could find none who would examine their arguments with a more grateful avidity for truth not yet apprehended, nor any who would be more sensible of their courtesy.

PRAGMATICISM

Charles S. Peirce. "Pragmaticism." MS 291, summer 1905.

Composed in the summer of 1905, this untitled text is based on the manuscript listed as MS 291 in Richard S. Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* and preserved in the Houghton Library, Harvard University. The first page of the manuscript is no longer extant.

DOCTOR X. The best of your screed in the April *Monist* was about the singleness of symbols. It is in truth bad morals to use words in other than their original senses. But apply this rule to your own use of the verb "is." When the child first uses this verb, he applies it to some *sensory* reality. How, then, in the face of your code of terminological ethics, do you ever dare to use the verb "to be" for indicating anything not sensory? I, for my part, stick to the *one* meaning of "is" rigidly. When you talk of "general objects being real," and the like, you seem not to be aware that the verbs "to be," "to be real," and "to exist" have *ever* precisely one and the same significance.

PRAGMATICIST. My statements today are not designed to answer objections, but merely to correct misapprehensions. However, as your objection seems motived by a grave misapprehension, I had better set *that* right. Only in order to guard against my misapprehending *you* in my turn, let me ask you whether you mean to say that throughout that vast philosophical "treatise" of yours, the signification of the verb "is" *is* really and truly in every instance the same.

DOCTOR X. It is.

PRAGMATICIST. And everywhere that meaning is "is real"?

DOCTOR X. Yes.

PRAGMATICIST. Thanks. Then the misapprehension that motives your objection is that you understand me to be more of a scholastic realist than you are, while in fact it is the other way. For this signification of "is," which occurs in hundreds of instances in your book, and is everywhere one and the same, by virtue of that fact satisfies the definition of a general, or, as the scholastics more accurately said, of a universal; and you tell me that when you say that that universal "is" *is* always the same, you mean that it "is real" everywhere, as well as the same. So that makes you a scholastic realist. But you go much further than that; for when you say that the signification *is* the same, you of course make this signification the subject of the verb "is," which according to your

statement is equivalent to a declaration that this signification which is one and the same in so many places of your book is a *sensory* object. Not Bernardus Carnotensis himself, who seems like you to have combined scholastic realism with individualism, went to the length of making any general a sensory object.

DOCTOR X. Now you are quibbling, you know.

PRAGMATICIST. Do not answer me, I beg. For remember that you, Doctor X, – like Y, Z, and W, – are not an existent individual, even if you are a sensory object, but only a general type, – unless indeed you are a mere man of straw. A reply could only vindicate you by showing that you were not a real type, when you would prove yourself to be a man of straw; in which case I might be provoked into the personality of burning you up, in our good old medieval fashion; – though I believe you limit yourself to roasting your antagonists. For my part, I have found the combustion of a man of straw one of the best means of stopping my logical chimney from smoking; while your doctrine would seem to debar you from the employment of that useful device. It is perhaps true that the sectators of individualism, the essence of whose doctrine is that reality and existence are coëxtensive, i.e., are either alike true or alike false of every subject, must, to be logical, go along with you in holding that 'real' and 'existent' have the same meaning, or *Inhalt*. But many a logician, as soon as he is convinced that that party is under that obligation (individualism furnishing the principle of the consequency as well as furnishing the antecedent) would regard that circumstance as creating a *reductio ad absurdum* of individualism, inasmuch as *reality* means a certain kind of nondependence upon thought, and so is a cognitionary character, while *existence* means reaction with the environment, and so is a dynamic character; and accordingly the two meanings, he would say, are clearly *not* the same. Individualists are apt to fall into the almost incredible misunderstanding that all other men are individualists, too, – even the scholastic realists, who, they suppose, thought that "universals exist." It is true that there are indications of there having been some who thought so in that greater darkness before the dawn of Aristotle's *Analytics* and *Topics*, when such grotesque weldings of doctrine as that of nominalistic Platonism are heard of, and when Roscellin may possibly have said that universals were *flatus vocis*. But I ask, Can anybody who has seen Westminster Abbey, who had read the Prologue to the *Canterbury Tales*, and who stops to consider that the metaphysics of the Plantagenet age must have more adequately represented the general intellectual standing of that age, when metaphysics absorbed its greatest heuristic minds, than the metaphysics of our day can represent our general intellectual condition, can any such person believe that the great doctors of that time believed that generals *exist*? They certainly did not so opine, but regarded generals as modes of determination of individuals; and such modes were recognized as being of the nature of thought. Now whoever cares to know what pragmaticism is should understand that on its metaphysical side it is an attempt to solve the problem, In what way can a general be unaffected by any thought

about it? Hence, before we treat of the evidences of pragmaticism, it will be needful to weigh the pros and cons of scholastic realism. For pragmaticism could hardly have entered a head that was not already convinced that there are real generals.

Another misapprehension: You seem to imagine that your argument from the talk of the child will be as convincing to me as it is to you. It is not so, because (aside from "is" not being one of the technical terms to which common sense limited my maxim) I do not think that the import of any word (except perhaps a pronoun) is limited to what is in the utterer's mind *actualiter*, so that when I mention the Greek language my meaning should be limited to such Greek words as I happen to be thinking of at the moment. It is, on the contrary, according to me, what is in the mind, perhaps not even *habitualiter*, but only *virtualiter* which constitutes the import.[1] To say that I hold that the import, or adequate ultimate interpretation, of a concept is contained, not in any deed or deeds that will ever be done, but in a habit of conduct, or general moral determination of whatever procedure there *may come to be*, is no more than to say that I am a pragmaticist. Now every animal must have habits. Consequently, it must have innate habits. In so far as it has cognitive powers, it must have *in posse* innate cognitive habits, which is all that anybody but John Locke ever meant by innate ideas.[2] To say that I hold this for true is implied in my confession of the doctrine of Common Sense, – not quite that of the old Scotch school, but a critical philosophy of common sense. It is impossible rightly to apprehend the pragmaticist's position without fully understanding that nowhere would he be less at home than in the ranks of individualists, whether metaphysical (and so denying scholastic realism), or epistemological (and so denying innate ideas).

DOCTOR Y. Allow me: you speak of holding a *Critical Philosophy of Common Sense*. What meaning would you have me attach to that phrase, seeing that Critical Philosophy and the Philosophy of Common Sense, the two rival and opposed ways of answering Hume, are at internecine war, impacificable. The Common Sense philosopher opines that, be Criticism never so indefatigable, it will have to come to a halt somewhere, and leave some belief uncriticized; namely, wherever no stimulus to doubt has ever been experienced. An uncriticized belief must, says the Common-sensist, *ipso facto* be

[1] This was said in 1868, before declaring for pragmaticism, thus: "No present actual thought (which is mere feeling) has any meaning, any intellectual value; for this lies, not in what is actually thought, but in what this thought may be connected with in representation by subsequent thoughts; so that the meaning of a thought is altogether something virtual." (*J. Spec. Phil.*, Vol. II, p. 149). This paper in fact expresses a kind of pragmatism not unlike that of Professor James.

[2] How surprisingly, however, Locke grew in philosophical power during the composition of the *Essay concerning Humane Understanding*!

regarded as the very truth. That sounds conclusive. Yet it does not satisfy any of the Criticists, at all, – be they Kantians or be they of one of the modern kinds that do not usually go by the name of Criticists. That a belief should be accepted as the bed-rock of truth simply and solely because it has not been criticized, – oh, this is to their minds too monstrous! They insist that first principles be scientifically established. To think otherwise, says the great Wundt, is to ask that philosophy should come into being by *equivocal generation*. He so resuscitates the phrase which, in the days when men believed in armary unguents, in mummial philtres, and in sigillary medicines, denoted the manner in which they thought that Satan's flies and the vilest of crawling things could be produced, in order to hint how much out of good odor common sense is in his estimation. Of a principle proposed for the foundation of philosophy, think the Criticists, it must either be proved that the very circumstances and form of human knowledge require its acceptance, or better, that scientific psychology should show that its truth is unavoidable, or still better, that physiology should support it as it supports parallelism, or best of all, that histology should almost bring it within the field of the microscope, as caryocinesis is supposed almost to give ocular demonstration of some high proposition. Now, without asking whether it be Common Sense or one of the Critical methods that is *right*, one cannot help seeing that Criticism and Common Sense are so immiscible that to plunge into either is to lose all touch with the other. The Criticist believes in criticizing first principles, while the Common Sensist thinks such criticism is all nonsense. So I can find no meaning in your straddling phrase.

PRAGMATICIST. The phrase denotes a particular stripe of Common-sensism, which is separated from the old Scotch kind by four distinguishing marks. The mark that I find it convenient to describe first is that the Critical Commonsensist holds that all the veritably indubitable beliefs are *vague*, – often in some directions highly so.

Logicians have too much neglected the study of *vagueness*, not suspecting the important part it plays in mathematical thought. It is the antithetical analogue of generality. A sign is objectively *general*, in so far as, leaving its effective interpretation indeterminate, it surrenders to the interpreter the right of completing the determination for himself. "Man is mortal." "What man?" "Any man you like." A sign is objectively *vague*, in so far as, leaving its interpretation more or less indeterminate, it reserves for some other possible sign or experience the function of completing the determination. "This month," says the almanac-oracle, "a great event is to happen." "What event?" "Oh, we shall see. The almanac doesn't tell that."[3] The *general* might be defined as that to which the

[3] This is illustrated in our use of the phrase "a *certain* man," which means that the determination which is left *uncertain* to the reader or auditor is, nevertheless, or once was, *certain* either to the utterer or to some other person.

principle of excluded middle does not apply. A triangle in general is not isosceles nor equilateral; nor is a triangle in general scalene. The *vague* might be defined as that to which the principle of contradiction does not apply. For it is false neither that an animal (in a vague sense) is male, nor that an animal is female. Mr. Kempe's great memoir in the *Philosophical Transactions* for 1886, the most solid piece of work upon any branch of the stecheology of relations that has ever been done, in addition to its intrinsic value, has that of taking us out of the logician's rut, and showing us how the mathematician conceives of logical objects. Thus, in §4, he says that the four angular points of a square "are not distinguishable from" one another. On first reading this, a person who was preoccupied with conceptions derived from logicians, was moved to write to the author and ask whether he did not mean "do not differ" from one another. For if the angles are undistinguished, how do we know there are more than one of them? But though some suggestions of the letter were adopted in a supplement to the memoir, Mr. Kempe stood to "undistinguished" and "undistinguishable"; and in §29 he is more explicit, saying of the units of a singulary[4] system of units (i.e., a system all whose units are undistinguished from one another), "that no definition can be given of, or remark made about, one which is not equally applicable to each of the others." In §73, he goes further in using the expression "undistinguished in dress or other circumstance," showing that he means to exclude distinction by means of relations. All this is utterly paradoxical to the logician, who will say that two vertices of a square are distinguished from each other in not being opposite the same vertex, and in various other ways. But the difficulty disappears as soon as he recognizes that Kempe's units are not supposed to be real objects, but are only *vague* ideas, to which nobody ever supposed the principle of contradiction to apply.

Notwithstanding their contrariety, generality and vagueness are, from a formal point of view, seen to be on a par. Evidently no sign can be at once vague and general in the same respect, since in so far as the right of determination is not distinctly extended to the interpreter it remains the right of the utterer. Hence also, a sign can only escape from being either vague or general by not being indeterminate. But that no sign can be absolutely and completely indeterminate is proved in *Memoirs of the American Academy of Arts and Sciences*, Vol. IX, 1870 (p. 27) where Plutarch's anecdote about appealing from Phillip drunk to Phillip sober is put to use. Yet every proposition actually asserted must refer to some non-general subject; for the doctrine that a proposition has but a single subject has to be given up in the light of the Logic of Relations. (See *The Open Court* for 1892 Oct. 13, Vol. VI, pp. 3416

[4] Kempe's word is 'single'; but I prefer 'singulary', from Latin *singularius*, not from *singularis*. His §127 throws further light on his meaning of "undistinguished."

et seq.) Indeed, all propositions refer to one and the same determinately singular subject, well-understood between all utterers and interpreters; namely, to The Truth, which is the universe of all universes, and is assumed on all hands to be real. But besides that, there is some lesser environment of the utterer and interpreter of each proposition that actually gets conveyed, to which that proposition more particularly refers, and which is not general. The *Open Court* paper referred to made this plain, but left unnoticed some truths of the first importance about vagueness. No communication of one person to another can be entirely definite, i.e., non-vague. We may reasonably hope that physiologists will some day find some means of comparing the qualities of one person's feelings with those of another, so that it would not be fair to insist upon their present incomparability as an inevitable source of misunderstanding. Besides, it does not affect the intellectual purport of communications. But wherever degree or any other possibility of continuous variation subsists, absolute precision is impossible. Much else must be vague, because no man's interpretation of words is based on exactly the same experience as any other man's. Even in our most intellectual conceptions, the more we strive to be precise, the more unattainable precision seems. It should never be forgotten that our own thinking is carried on as a dialogue, and though mostly in a lesser degree, is subject to almost every imperfection of language. I have worked out the logic of vagueness with something like completeness, but need not inflict more of it upon you, at present.

That veritably indubitable beliefs are especially vague could be proved *a priori*. But proof not being aimed at today, it will be simpler to say that the Critical Common-sensist's personal experience is that a suitable line of reflexion accompanied by imaginary experimentation always excites doubt of any very broad proposition if it be defined with precision. Yet there are beliefs of which such a critical sifting invariably leaves a certain vague residuum unaffected. One ought then to ask oneself, whether, since much of the original belief has disappeared under an attentive dissection, perseverance might not effect the destruction of what remains of it. This question always appears reasonable as long as one stands far enough away from the facts of the case, and views them as one would a painting of Monet.

But the answer that a closer scrutiny dictates in some cases is that it is not because insufficient pains have been taken to precide[5] the residuum, that it

[5] Meaning to render precise, that is, non-vague, non-indefinite. The word is intended to cover, but not to be tied down to, the usual acception of the French *préciser*, which ought to have been *précider*, like *décider*. Latin is not so rich in stems suited to the purposes of philosophical terminology that we can afford to waste any of them; and we should, and all do, endeavor to restrict the resort to Greek to cases where a more highly technical word is wanted. Now the present employment of the two Latin verbs *praecidere* and

is vague: it is that it is vague intrinsically. Take for example our belief in the Order of Nature. The criticisms of it in *J. Spec. Ph.* (p. 204), in *Pop. Sci. M.* (XIII pp. 203–217), *J. H. Studies* (pp. 175–181), *Monist* (II pp. 321–337, III pp. 561–567), as well as by various other writers of whom may be mentioned as long antecedent to the writer, Renouvier, Delboeuf, Fouillée, Blood, and James, and no doubt there were others, and since that time Dewey and I know not who else, appear to me to have stripped it of all rational precision. As precisely defined it can hardly be said to be absolutely indubitable considering how many thinkers there are who do not believe it. But who can think that there is *no* order in nature?

Could I be assured that other men candidly and with sufficient deliberation doubt any proposition which I regard as indubitable, that fact would inevitably cause me to doubt it, too. I ought not, however, lightly to admit that they do so doubt a proposition after the most thorough criticism by myself and anxious consideration of any other criticisms which I have been able to find and understand has left it quite indubitable by me, since there are other states of mind that can easily be mistaken for doubt. If, indeed, the phenomenon in question were at all a common one, instead of being among the rarest of experiences, I should return to a variety of Common-sensism which has always strongly attracted me, namely, that there is no definite and fixed collection of opinions that are indubitable, but that criticism gradually pushes back each individual's indubitables, modifying the list, yet still leaving him beliefs indubitable at the time being. The reason I have of late given up that opinion, attractive as I find it, is that the facts of my experience accord better with the theory of a fixed list, the same for all men. I do not suppose that it is absolutely fixed (for my synechism would revolt at that), but that it is so nearly so, that for ordinary purposes it may be taken as quite so.

Doubt is a state of mind marked by a feeling of uneasiness; but we cannot, from a logical, least of all from a pragmaticistic point of view, regard the

praescindere in our English nomenclature is shockingly wasteful. *Prescind* is a good word in the sense explained in *Proceedings of the American Academy of Arts and Sciences*, Vol. VII, 1867 (p. 289); but instead of forming the derivates *presciss*, *prescission*, etc., writers have hitherto either deflected *precise*, *precision*, etc. from their very different and well-established meanings, or they have got along without any such words, which is embarrassing to writer and reader.

The use of *presciss*, *prescission*, etc. will somewhat relieve the burden upon *abstract*, that unfortunate stem, which is cursed with two remote meanings of equal authority. Writers ought, at any rate, never to use it without stopping to consider carefully whether they have made it quite clear to which kind of abstraction they refer, the *prescissive* (when in nine cases out of ten it would have been better to use one of the derivates of *praescindere*, and in the tenth to explain oneself more fully), or the *hypostatic*. The latter might be called *substantivization*; but *substantivizative* and *substantivizational* are fearful expressions for matters that in logic stand in the first rank of importance.

doubt as consisting in the feeling. A man in doubt is usually trying to imagine how he shall, or should, act when or if he finds himself in the imagined situation. He supposes himself to have an end in view, and two different and inconsistent lines of action offer themselves. His action is in imagination (or perhaps really) brought to a stop because he does not know whether (so to speak) the right hand road or the left hand road is the one that will bring him to his destination; and (to continue the figure of speech) he waits at the fork for an indication, and kicks his heels. His pent up activity finds vent in feeling, which becomes the more prominent from his attention being no longer absorbed in action. A true doubt is accordingly a doubt which really interferes with the smooth working of the belief-habit. Every natural or inbred belief manifests itself in natural or inbred ways of acting, which in fact constitute it a belief-habit. [I need not repeat that I do not say that it is the single deeds that constitute the habit. It is the single "ways," which are conditional propositions each general.] A true doubt of such a belief must interfere with this natural mode of acting. If a philosophist, reflecting upon the belief from an extraneous or unnatural point of view, develops new modes of manifestation of that belief (as, for example, by associating it with certain phrases), these new habits must not be regarded as expressions of the natural belief *simply*; for they inevitably involve something more. Consequently, if subsequent reflexion results in doubt of them, it is not necessarily doubt of the original belief, although it may be mistaken for such doubt.

These considerations lead me, quite naturally, to mention another mark of the Critical Common-sensist that separates him from the old school. Namely, he opines that the indubitable beliefs refer to a somewhat primitive mode of life, and that, while they never become dubitable in so far as our mode of life remains that of somewhat primitive man, yet as we develop *degrees of self-control* unknown to that man, occasions of action arise in relation to which the original beliefs, if stretched to cover them, have no sufficient authority. In other words, we outgrow the applicability of instinct, – not altogether, by any manner of means, but in our highest activities. The famous Scotch philosophers lived and died out before this could be duly appreciated.

DOCTOR Y. What do you mean by "somewhat primitive"? And by what sort of reasoning can a dubitable proposition about experience become indubitable?

PRAGMATICIST. A searching question, because some of our beliefs which seem as indubitable as any are of such a character that they can hardly have entered the minds, say, of Neanderthal men, and in any case, cannot possibly have been transmitted to us from the first conscious animals. Consequently, Common-sensism has to grapple with the difficulty that if there are any indubitable beliefs, these beliefs must have grown up; and during the process, cannot have been indubitable beliefs. Still, I see no reason for thinking that beliefs that were dubitable became indubitable. Every decent house-dog has

been taught beliefs that appear to have no application to the wild state of the dog; and yet your trained dog has not, I guess, been observed to have passed through a period of scepticism on the subject. There is every reason to suppose that belief came first, and the power of doubting long after. Doubt, usually, perhaps always, takes its rise from surprise, which supposes previous belief; and surprises come with novel environment. I will only add that though precise reasoning about precise experiential doubt could not entirely destroy doubt, any more than the action of finite conservative forces could leave a body in a continuous state of rest, yet vagueness, which is no more to be done away with in the world of logic than friction in mechanics, can have that effect.

As I was saying, a modern recognition of evolution must distinguish the Critical Common-sensist from the old school. Modern science, with its microscopes and telescopes, with its chemistry and electricity, and with its entirely new appliances of life, has put us into quite another world; – almost as much so as if it had transported our race to another planet. Some of the old beliefs have no application except in extended senses, and in such extended senses they are sometimes dubitable and subject to just criticism. It is above all the normative sciences, esthetics, ethics, and logic, that men are in dire need of having severely criticized in their relation to the new world created by science. Unfortunately, this need is as unconscious as it is great. The evils are in some superficial way recognized; but it never occurs to anybody that the study of esthetics, ethics, and logic can be seriously important, because these sciences are conceived by all but their deepest students in the old way. It only concerns my present purpose to glance at this state of things. The needed new criticism must know whereon it stands; namely, on the beliefs that remain indubitable; and young Critical Common-sensists of intellectual force who burn for a task in which they can worthily sacrifice their lives without encouragement, reward, recognition, or a hearing (and I trust such young men still live) can find in this field their heart's desire.

Yet a third mark of the Critical Common-sensist is that he has a high esteem for doubt. He may almost be said to have a *sacra fames* for it. Only, his hunger is not to be appeased with paper doubts: he must have the heavy and noble metal, or else belief.

He quite acknowledges that what has been indubitable one day has often been proved on the morrow to be false. He grants the presciss proposition that it may be so with any of the beliefs he holds. He really cannot admit that it may be so with all of them; but here he loses himself in vague unmeaning contradictions.

DOCTOR Y. Can indubitable propositions be demonstrable?

PRAGMATICIST. Indubitable propositions must be ultimate premisses, or at least, must be held without reference to precise proofs. For what one cannot doubt one cannot argue about; and no precise empirical argument can free its conclusion altogether from rational doubt.

Yet it is true that whenever one turns a critical glance upon one of our original beliefs, – say, the belief in the order of nature, – the mind at once seems vaguely to pretend to have reasons for believing it. One dreams of an inductive proof. One surmises that the belief results from something like an inductive proof that has been forgotten. Very likely it did, in a sense of the term "inductive process" that is so generalized as to include uncontrolled thought. But this admission must be accompanied by the emphatic denial that the indubitable belief is inferential, or is "accepted." It simply remains unshaken as it always was. That does not at all interfere with the theory that in the psychological process of its development, the occurrence of single experiences, such as might have been predictively deduced from it, were an indispensible factor, while an original potentiality of the belief-habit must have been a correlative factor. All this is perfectly consistent, too, with the necessity of criticizing the ordinary axioms of reasoning and of morals, as well as ordinarily developed ideals, as soon as they are extended so as to become applicable to the new world created by science.

I was saying that the Critical Common-sensist feels that the danger, – the scientific danger, at any rate; and Philosophy is a department of pure Heuretic Science even less concerned, for example, about practical religion, if possible, than religion ought to be about it, – does not lie in believing too little but in believing too much. The indolent university student, no matter at what pains his professor of philosophy may be to set him upon his own legs, yet having a well-grounded respect for that professor's superior acquirements and force of intellect, finds it much easier to accept all he says, as true because he says it, than to submit said professor's arguments to searching criticism; and he thus becomes, on the average, quite as much a slave to authority as was the average scholar of the medieval schools. Only, instead of bowing to Aristotle and the universal voice of the church sounding *semper eadem*, he submits to the yoke of some young doctrinaire with whom every other like him disagrees. With such sentiments, the Critical Common-sensist sets himself in serious earnest to the systematic business of endeavoring to bring all his very general first premisses to recognition, and of developing every suspicion of doubt of their truth, by the use of logical analysis, and by experimenting in imagination. If, besides being a Critical Common-sensist, he is also a pragmaticist, he will further hold that everything in the substance of his beliefs can be represented in the schemata of his imagination; that is to say, in what may be compared to composite photographs of continuous series of modifications of images; these composites being accompanied by conditional resolutions[6] as to conduct.

[6] By a *categorical resolution* I mean a representation to oneself that one will behave in a certain general way in a certain expected contingency, this representation being received with satisfaction, being rehearsed with pleasure, and perhaps exciting a special effort to learn it as a lesson. The purpose toward the accomplishment of which the action tends

These resolutions should cover all classes of circumstances, in the sense that they would produce (or, *perhaps*[7] more strictly, are manifestations of whatever it may be in our occult nature that produces) determinations of habit corresponding to every possible pragmaticistic application of the propositions believed.

Pragmaticism is, of course, in its developed fulness, too recent a phenomenon in the history of philosophy to have disclosed anything to direct experience concerning its tendencies that is particularly trustworthy. Thus far, however, it would appear that, as a matter of fact, pragmaticists press their peculiar doubts about first principles a good deal further and with a more straightforward earnestness than Kantians do. For when a Kant expresses a doubt, one has still to learn whether it is the substance of the proposition that he doubts or merely its attachment to one faculty or to another. One has even known of a pragmaticist being called by a Kantian "David Hume Redivivus"; but I fancy it was more like the David Hume of some mediumistic *séance*.

DOCTOR X. I should think that so passionate a lover of doubt would make a clean sweep of his beliefs.

PRAGMATICIST. You naturally would, holding the infant's mind to be a *tabula rasa* and the adult's a school slate, on which doubts are written with a soapstone pencil to be cleaned off with the dab of a wet sponge; but if they are marked with talc on man's "glassy essence," they may disappear for a long time only to be revived by a breath.

DOCTOR X. Yours seemed marked with t-a-l-k. Doubtless your pragmaticist dotes too much on doubt to risk subjecting it to scientific experimentation.

PRAGMATICIST. Bah! I may as well capitulate first as last. I have been betrayed by that execrable banality, *auri sacra fames*, which is not even good poetry, since it is inaccurate. For what it *expresses* is the hoarding passion of the miser, a sort of collector's rage for gold as gold, while all it *means* in the familiar passages is no more than simple cupidity; and that is what I meant in applying it to the Critical Common-sensist's eager pursuit of doubt. He is none of those overcultivated Oxford dons, – I hope their day is over, – whom any discovery that brought quietus to a vexed question would evidently vex because it would end the fun of arguing around it and about it and over it. On the contrary what he adores, if he is a good pragmaticist, is *power*; – not

is taken for granted. By a *conditional resolution*, I mean a similar representation except that the purpose or end in view is only arbitrarily supposed to be aimed at and the circumstances under which the action would take place are not generally expected to arise. By a *conditional habit*, I mean a determination of a man's occult nature tending to cause him to act in a certain general way in case certain general circumstances should arise and in case he should be animated by a certain purpose.

[7] Were it a question of brute force, there were no need of the perhaps. But being a logos-influence, the manifest would promise more efficiency than the occult.

the sham power of brute force, which, even in its own specialty of spoiling things, secures such slight results; but the creative power of reasonableness, which subdues all other powers, and rules over them with its sceptre, knowledge, and its globe, love. It is as one of the chief lieutenants of reasonableness that he highly esteems doubt, although it is not amiable.

As for allaying doubts concerning the first principles of logic and philosophy by means of scientific experiments, he does not attempt that for two reasons, one a fine little reason that insinuates itself between the joints of the Wundtian armour, the other more like wholesome country air.

The small reason is sufficient. It is that any such idioscopic inquiry must proceed upon the virtual assumption of sundry logical and metaphysical beliefs; and it is rational to settle the validity of those before undertaking an operation that supposes their truth. Now whether the truth of them be explicitly laid down on critical grounds, or the doctrine of Common Sense prevent our pretending to doubt it, along with these all other sound first principles will be admitted, and so the whole inquiry will be concluded before the first outward experiment is made. But this preliminary inquiry is long and arduous.

DOCTOR X. A sort of Panama Commission business, apparently. I should say, Pitch in like Lesseps, unless your second objection is more serious. What is that?

PRAGMATICIST. There is nothing novel in it. It is that nothing is so unerring as instinct within its proper field, while reason goes wrong about as often as right, – perhaps oftener. Now those vague beliefs that appear to be indubitable have the same sort of basis as scientific results have. That is to say, they rest on experience, – on the total everyday experience of many generations of multitudinous populations. Such experience is worthless for distinctively scientific purposes, because it does not make the minute distinctions with which science is chiefly concerned; nor does it relate to the recondite subjects of science, although all science, without being aware of it, virtually supposes the truth of the vague results of uncontrolled thought upon such experiences, cannot help doing so, and would have to shut up shop if she should manage to escape accepting them. No "wisdom" could ever have discovered argon; yet within its proper sphere which embraces objects of universal concern, the instinctive result of human experience ought to have so vastly more weight than any scientific result, that to make laboratory experiments to ascertain, for example, whether there be any uniformity in nature or no would vie with adding a teaspoonful of saccharin to the ocean in order to sweeten it.

DOCTOR Y. Is there any further peculiarity which distinguishes Critical Common-sensism from that of Reid and Dugald Stewart?

PRAGMATICIST. Yes; for it criticizes the critical method, follows its footsteps, tracks it to its lair. To the accusation that Common Sense accepts a proposition as indubitable because it has not been criticized, the answer is that this

confounds two uses of the word "because." Neither the Philosophy of Common Sense nor the man who holds it accepts any belief *on the ground* that it has not been criticized. For, as already said, such beliefs are not "accepted." What happens is that one comes to recognize that one has had the belief-habit as long as one can remember; and to say that no doubt of it has ever arisen is only another way of saying the same thing. But it is quite true that the Common-sensist like everybody else, the Criticist included, believes propositions *because* they have not been criticized in the sense that he does not doubt certain propositions that he would have doubted if he had criticized them. For in the first place, to criticize is *ipso facto* to doubt, and in the second place criticism can only attack a proposition after it has given it some precise sense in which it is impossible entirely to remove the doubt. It is probably true, too, that the Common-sensist believes unquestioningly some propositions that might have been criticized and that are not true. We are all liable to do that; but perhaps he is more in danger of it than other men. Still, as a fact, it is difficult to find a Criticist who does not hold to more fundamental beliefs than any Critical Common-sensist does.

The Critical Philosopher seems to opine that the fact that he has not hitherto doubted a proposition is no reason why he should not henceforth doubt it. [At which Common Sense whispers that, whether it be 'reason' or no, it will be a well-nigh insuperable *obstacle* to doubt.] Accordingly, he will not stop to ask whether he actually does doubt it or not, but at once proceeds to examine it. Now if it happens that he *does* actually doubt the proposition, he does quite right in starting a critical inquiry. But in case he *does not* doubt, he virtually falls into the Cartesian error of supposing that one can doubt at will. A proposition that could be doubted at will is certainly not *believed*. For belief, while it lasts, is a strong habit, and as such, forces the man to believe until some surprise breaks up the habit. The breaking of a belief can only be due to some novel experience, whether external or internal. Now experience which could be summoned up at pleasure would not be experience.

Kant (whom I *more* than admire) is nothing but a somewhat confused pragmatist. A real is anything that is not affected by men's cognitions *about it*; which is a verbal definition and not a doctrine. An external object is anything that is not affected by any cognitions, whether about it or not, of the man to whom it is external. Exaggerate this, in the usual philosopher-fashion, and you have the conception of what is not affected by any cognitions at all. Take the converse of this definition and you have the notion of what does not affect cognition, and in this indirect manner you get a hypostatically abstract notion of what the *Ding an sich* would be. In this sense, we also have a notion of a sky-blue demonstration; but in half a dozen ways the *Ding an sich* has been proved to be nonsensical; and here is another way. It has been shown (*Open Court*, *loc. cit.*) that in the formal analysis of a proposition, after all that words can convey has been thrown into the predicate,

there remains a subject that is indescribable and that can only be pointed at or otherwise indicated, unless a way of finding what is referred to be prescribed. The *Ding an sich*, however, can neither be indicated nor found. Consequently, no proposition can refer to it, and nothing true or false can be predicated of it. Therefore, all references to it must be thrown out as meaningless surplusage. But when that is done, we see clearly that Kant regards Space, Time, and his Categories just as everybody else does, and never doubts or has doubted their objectivity. His limitation of them to possible experience is pragmatism in the general sense; and the pragmaticist, as fully as Kant, recognizes the mental ingredient in these concepts. Only (trained by Kant to define), he defines more definitely, and somewhat otherwise, than Kant did, just how much of this ingredient comes from the mind of the individual in whose experience the cognition occurs. The kind of Commonsensism which thus criticizes the Critical Philosophy and recognizes its own affiliation to Kant has surely a certain claim to call itself Critical Commonsensism.

DOCTOR Z. You say that no collection of individuals could ever be adequate to the extension of a concept in general, which is, of course, the old peripatetic doctrine. But really I do not quite see how you propose to reconcile that to the proposition that the meaning extends no further than to future embodiments of it.

PRAGMATICIST. The original paper on pragmaticism was completed in September 1877[8] and appeared in the *Popular Science Monthly* for January 1878. At that time, modern investigation of the doctrines of multitude had not begun.[9] Indeed, there are indications in that paper of an endless series not being regarded as a collection! Yet the philosophical importance of the new studies was fully recognized by the pragmaticist from the first.[10]

In the *Monist* (Vol. VII, 1897, p. 206 *et seq*.) the objectivity of possibility was asserted; and the hypothesis defended in Vols. I and II supposes possibility to be real. It was, indeed, *implied* in the scholastic realism maintained

[8] This is fixed in the writer's memory by the fact that it was begun after leaving Hoboken on a steamer and was finished a day or two before reaching Plymouth, nothing remaining to be done except to translate it into English. The *Comptes Rendus* of the Europäischer Gradmessung show that on Sep. 29 he was absorbed in quite another discussion in Stuttgart.

[9] It was hardly available for philosophists before June 1883; and was not put into shape even then, Cantor being long occupied, apparently, with his great theory of ordinals, which hardly concerns multitude.

[10] C. S. Peirce's paper "On the Logic of Number," published in the spring of 1881 (*Am. J. Math*. Vol. IV, pp. 85–95) contained, though not in a perspicuous form, the leading results of Dedekind's classic of 1887.

in the *North American Review* (Vol. CXIII, pp. 454 et *seqq.*). But the paper in *Pop. Sci. M.* of Jan. 1878 (Vol. XII, pp. 286–302) evidently endeavors to avoid asking the reader to admit a real possibility. The theory of modality is far too great a question to be treated incidentally to any other. But the distinct recognition of real possibility is certainly indispensible to pragmaticism.

The pragmaticist has always explicitly stated that the intellectual purport of a concept consists in the truth of certain conditional propositions asserting that if the concept be applicable, and the utterer of the proposition or his fellow have a certain purpose in view, he would act in a certain way. A purpose is essentially general, and so is a way of acting; and a conditional proposition is a proposition about a universe of possibility. At the same time, the conditional proposition refers only to possible individual actions. If there be any paradox here, it is partially resolved in the important paper in *The Monist*, Vol. VII, where it is shown that an endless series of experiences, each entirely consistent with those that precede it, cannot itself be experienced (*as* such endless series), but involves a first dose of ideality, or generality. It is not a perfect general, it is true; but the whole endless series of steps from this to true continuity (which is perfect generality elevated to the mode of conception of the Logic of Relations) are there described. Whoever wishes to complete the theory of modality should set out from the results there demonstrated.

The conditional proposition which the pragmaticist holds to constitute the purport of a concept is in the article of Jan. 1878 spoken of as expressing a "fact"; and it does indeed express the actual state of mind of a person who has made, or is ready to make, a resolve, – not a categorical resolve, but a resolve conditional upon having a certain purpose. But nobody would make any difficulty in admitting that every resolve is limited to future acts, and acts are the most perfectly individual objects there are.

I apprehend that I have thus substantially answered your question; but in order to make my answer a little clearer, I will illustrate it by the consideration of the continuity of Space. In this illustration I shall adopt the Leibnizian conception of Space in place of the Newtonian, which I believe to be the true one. In that Leibnizian view, Space is merely a possibility limited by an impossibility; – a possibility of no matter what affections of bodies (determining their relative positions), together with the impossibility of those affections being actualized otherwise than under certain limitations, expressed in the postulates of topical, graphical, and metrical geometry. No collection of points, though it be abnumerable to the billionth degree, could fill a line so that there would be room for no more points; and in that respect the line is truly general; no possible multitude of singulars is adequate to it. Space is thus truly general; and yet it is, so to say, nothing but the way in which actual bodies conduct themselves.

DOCTOR Z. But the idea of Leibnizian Space, if there were such a thing, would not be a concept. It would be a *Vorstellung*, or composite of images. Kant might perhaps have called it a *schema*, since he defines a *schema* as a determination of intuition by a concept through the reproductive imagination. Of course, it would not be one of those *transcendental* schemata, which he talks of in the *Critik*; but it possesses much the same sort of bastard generality.

PRAGMATICIST. The breakneck hurry in which the *C.d.r.V.* was written is its only defence against a charge of slovenly workmanship. Every detail is left in the rough; and there is no more unfinished apartment in the whole glorious edifice than that devoted to the Schematization of the Categories. Kant says that no image, and consequently we may add, no collection of images, is adequate to representing what a schema represents. If that be the case, I should like to know how a schema is not as general as a concept. If I ask him, all he seems to answer is that it is the product of a different "faculty."

But what you would seem to mean by a concept is the meaning of some general symbol, this meaning being conceived as referring to the symbol. Now it is precisely the pragmaticist's contention that symbols, owing their origin (on one side) to human conventions, cannot transcend conceivable human occasions. At any rate, it is plain that no possible collection of single occasions of conduct can be, or adequately represent, *all* conceivable occasions. For there is no collection of individuals of any general description which we could not conceive to receive the addition of other individuals of the same description aggregated to it. The generality of the possible, the only true generality, is distributive, not collective. You perhaps do not see how this remark bears upon your question.

DOCTOR W. I should like to know what the attitude of your pragmaticism is to the question of whether or no valuation is a factor of all intellectual meaning.

PRAGMATICIST. Well, collective and distributive universality can bide their time. Considering how it stood in the mid-channel of pragmatistic thought to join ethics to logic, it seems to me strange that we had to wait until 1903 for any pragmatist to assert that logic ought to be based upon ethics. Perhaps some one of us had said it before; but I only know that it was then said in a course of lectures before the Lowell Institute in Boston, and was maintained on the ground that reasoning is thought subjected to self-control, and that the whole operation of logical self-control takes precisely the same quite complicated course which everybody ought to acknowledge is that of effective ethical self-control. Mr. Schiller in the same year published an essay entitled "The Ethical Basis of Metaphysics." The title is promising, but the essay is, for me, reduced to gibberish by the author's talking about the *real*, without the slightest hint of what he means by this word except that it is something the character of which is affected (and it would seem very greatly) by

anybody's thinking that it possesses or does not possess that character. In short, he treats a verbal definition as a doctrine, and stoutly denying it, leaves the word a mystery for so stupid a reader as me. To meet some such barrier has more than once been my ill-luck in reading this earnest writer, who always seems to have something he is determined to make out, riding roughshod over everything.

To return to self-control, which I have time only slightly to sketch, of course there are inhibitions and coordinations that entirely escape consciousness. As we rather ridiculously say, they are "purely physiological." There are, in the next place, modes of self-control which seem quite instinctive. Next, a man can be his own training-master and thus control his self-control. When this point is reached, much or all the training may be conducted in imagination, quite effectually. When a man trains himself, thus controlling control, he must have in view some rule, in a broad sense moral, special and irrational though it be. But next, he may undertake (on another occasion, of course) to improve upon this rule; that is, to exercise a control over his control of control. To do this he must have in view something higher than an irrational rule. He must have some sort of moral principle. This, in turn, may be controlled by reference to an esthetic ideal of what is fine. There are certainly more grades than I have enumerated. Perhaps their number is indefinite. The brutes are certainly capable of more than one grade of control; but it seems to me that our superiority to them is more due to our greater number of grades of self-control than it is to our versatility.

DOCTOR Y. Is it not due to our faculty of language?

PRAGMATICIST. To my thinking that faculty is itself a phenomenon of self-control. For thinking is a kind of conduct, and is itself controllable, as everybody knows. Now the intellectual control of thinking takes place by thinking about thought. All thinking is by signs; and the brutes use signs. But they perhaps rarely think of them as signs. To do so is manifestly a second step in the use of language. Brutes use language, and seem to exercise some little control over it. But they certainly do not carry this control to anything like the same grade that we do. They do not criticize their thought logically. One extremely important grade of thinking about thought, which my logical analyses have shown to be one of chief, if not the chief, explanation of the power of mathematical reasoning, is a stock topic of ridicule among the wits. This operation is performed when something that one has thought about any subject is itself made a subject of thought. You remember how in the last *Intermède* to the *Malade Imaginaire*, the doctor puts a question to the candidate for the medical degree?

> Si mihi licentiam dat dominus praeses,
> Et tanti docti doctores
> Et assistantes illustres

Très sçavanti bacheliero,
Quem estimo et honoro,
Demandabo causam et rationem quare
Opium facit dormire.

To which the candidate replies,

Mihi a docto doctore
Demandatur causam et rationem quare
Opium facit dormire.
A quoi respondeo,
Quia est in eo
Vertus dormitiva,
Cujus est natura
Sensus assoupire.

Whereupon the chorus bursts out,

Bene, bene, bene, bene respondere.
Dignus, dignus est intrare
In nostro docto corpore.
Bene, bene respondere.

Even in this burlesque instance, this operation of hypostatic abstraction is not quite utterly futile. For it does say that there is *some* peculiarity in the opium to which the sleep must be due; and this is not suggested in merely saying that opium puts people to sleep. By the way, John Locke's account of a real function of this sort at Montpellier three years after the play was first performed with such tragic effect upon Molière shows that there was more truth than caricature in the *Intermède*. In order to get an inkling, – though a very slight one, – of the importance of this operation in mathematics, it will suffice to remember that a *collection* is a hypostatic abstraction, or *ens rationis*, that *multitude* is the hypostatic abstraction derived from a predicate of a collection, and that a *cardinal number* is an abstraction attached to a multitude. So an *ordinal number* is an abstraction attached to a *place*, which in its turn is a hypostatic abstraction from a relative character of a unit of a *series*, itself an abstraction again. Now, Doctor Z, as well as I can make out, what you mean by a *concept* is a predicate considered by itself, except for its connection with the word or other symbol expressing it, and now regarded as denotative of the concept. Such a concept is not merely prescissively abstracted, but, as being made a subject of thought, is hypostatically abstract. So understood, it is true that it is more removed from the perceptual objects than is the *Vorstellung*, or composite of images. But for all that, its intellectual

purport is just the same. It is only the grammatico-logical form that is transmuted.

And you, Doctor W, will see that since pragmaticism makes the purport to consist in a conditional proposition concerning conduct, a sufficiently deliberate consideration of that purport will reflect that the conditional conduct ought to be regulated by an ethical principle, which by further self-criticism may be made to accord with an esthetical ideal. For I cannot admit that any ideal can be too high for a duly transfigured esthetics. So, although I do not think that an esthetic valuation is essentially involved *actualiter* (so to speak) in every intellectual purport, I do think that it is a *virtual* factor of a duly rationalized purport. That is to say, it really does belong to the purport, since conduct may depend upon its being appealed to. Yet in ordinary cases, it will not be needful that this should be done. Such seem to me to be the facts, phrase them how you may.

DOCTOR W. I am glad to hear you say so. And what do you think of Humanism?

PRAGMATICIST. Why if you had said *Anthropomorphism*, I should have replied that I heartily embrace most of the clauses of that doctrine, if some right of private interpretation be allowed me. I hold, for instance, that man is so completely hemmed in by the bounds of his possible practical experience, his mind is so restricted to being the instrument of his needs, that he cannot, in the least, *mean* anything that transcends those limits. The strict consequence of this is, that it is all nonsense to tell him that he must not think in this or that way because to do so would be to transcend the limits of a possible experience. For let him try ever so hard to think anything about what is beyond that limit, it simply cannot be done. You might as well pass a law that no man shall jump over the moon; it wouldn't forbid him to jump just as high as he possibly could.

For much the same reason, I do not believe that man can have the idea of any cause or agency so stupendous that there is any more adequate way of conceiving it than as vaguely like a man. Therefore, whoever cannot look at the starry heavens without thinking that all this universe must have had an adequate cause, can in my opinion no otherwise think of that cause half so justly than by thinking it is God.

But when you talk of Humanism, I am utterly perplexed to know what it means. One of its clauses seems borrowed from Hegel, on whom how greatly its author dotes is well known. Namely, he apparently does not wish to have phenomena torn to pieces; or at any rate not if that introduces any falsity; and he does not wish us to devote any attention to the effects of conditions that do not occur, or at any rate not to substitute the solution of such a problem for the true problems of nature. For my part, I think such talk shows great ignorance of the conditions of science. Then again, as I understand it, this Humanism is to be a philosophy not purely intellectual because every

department of man's nature must be voiced in it. For my part, I beg to be excused from having any dealings with such a philosophy. I wish philosophy to be a strict science, passionless and severely fair. I know very well that science is not the whole of life, but I believe in the division of labor among intellectual agencies. The apostle of Humanism says that professional philosophists "have rendered philosophy like unto themselves, abstruse, arid, abstract, and abhorrent." But I conceive that some branches of science are not in a healthy state if they are *not* abstruse, arid, and abstract, in which case, like the Aristotelianism which is this gentleman's particular *bête noire*, it will be as Shakespeare said (*of it*, remember):

> Not harsh and crabbed as dull fools suppose,
> But musical as is Apollo's lute, etc.

ISSUES OF PRAGMATICISM

Charles S. Peirce. "Issues of Pragmaticism." *The Monist* 15.4 (October 1905): 481–499.

Pragmaticism was originally enounced[1] in the form of a maxim, as follows: Consider what effects that might *conceivably* have practical bearings you *conceive* the object of your *conception* to have. Then, your *conception* of those effects is the whole of your *conception* of the object.

I will restate this in other words, since ofttimes one can thus eliminate some unsuspected source of perplexity to the reader. This time it shall be in the indicative mood, as follows: The entire intellectual purport of any symbol consists in the total of all general modes of rational conduct which, conditionally upon all the possible different circumstances and desires, would ensue upon the acceptance of the symbol.

Two doctrines that were defended by the writer about nine years before the formulation of pragmaticism may be treated as consequences of the latter belief. One of these may be called Critical Common-sensism. It is a variety of the Philosophy of Common Sense, but is marked by six distinctive characters, which had better be enumerated at once.

Character I. Critical Common-sensism admits that there not only are indubitable propositions but also that there are indubitable inferences. In one sense, anything evident is indubitable; but the propositions and inferences which Critical Common-sensism holds to be original, in the sense one cannot "go behind" them (as the lawyers say), are indubitable in the sense of being acritical. The term "reasoning" ought to be confined to such fixation of one belief by another as is reasonable, deliberate, self-controlled. A reasoning must be conscious; and this consciousness is not mere "immediate consciousness," which (as I argued in 1868, *J. Spec. Phil.*, Vol. II) is simple Feeling viewed from another side, but is in its ultimate nature (meaning in that characteristic element of it that is not reducible to anything simpler), a sense of taking a habit, or disposition to respond to a given kind of stimulus in a given kind of way. As to the nature of that, some *éclaircissements* will appear below and again in my third paper, on the Basis of Pragmaticism. But the secret of

[1] *Popular Science Monthly*, XII, 293; for Jan. 1878. An introductory article opens the volume, in the number for Nov., 1877.

rational consciousness is not so much to be sought in the study of this one peculiar nucleolus, as in the review of the process of self-control in its entirety. The machinery of logical self-control works on the same plan as does moral self-control, in multiform detail. The greatest difference, perhaps, is that the latter serves to inhibit mad puttings forth of energy, while the former most characteristically insures us against the quandary of Buridan's ass. The formation of habits under imaginary action (see the paper of Jan., 1878, p. 290 at the top) is one of the most essential ingredients of both; but in the logical process the imagination takes far wider flights, proportioned to the generality of the field of inquiry, being bounded in pure mathematics solely by the limits of its own powers, while in the moral process we consider only situations that may be apprehended or anticipated. For in moral life we are chiefly solicitous about our conduct and its inner springs, and the approval of conscience, while in intellectual life there is a tendency to value existence as the vehicle of forms. Certain obvious features of the phenomena of self-control (and especially of habit), can be expressed compactly and without any hypothetical addition, except what we distinctly rate as imagery, by saying that we have an occult nature of which and of its contents we can only judge by the conduct that it determines, and by phenomena of that conduct. All will assent to that (or all but the extreme nominalist), but anti-synechistic thinkers wind themselves up in a factitious snarl by falsifying the phenomena in representing consciousness to be, as it were, a skin, a separate tissue, overlying an unconscious region of the occult nature, mind, soul, or physiological basis. It appears to me that in the present state of our knowledge a sound methodeutic prescribes that, in adhesion to the appearances, the difference is only relative and the demarcation not precise.

According to the maxim of Pragmaticism, to say that determination affects our occult nature is to say that it is capable of affecting deliberate conduct; and since we are conscious of what we do deliberately, we are conscious *habitualiter* of whatever hides in the depths of our nature; and it is presumable (and *only* presumable,[2] although curious instances are on record) that a sufficiently energetic effort of attention would bring it out. Consequently, to say that an operation of the mind is controlled is to say that it is, in a special sense, a conscious operation; and this no doubt is the consciousness of reasoning. For this theory requires that in reasoning we should be conscious, not only of the conclusion, and of our deliberate approval of it, but also of its being the result of the premiss from which it does result, and furthermore that the inference is one of a possible class of inferences which conform to one guiding principle. Now in fact we find a well-marked class of mental operations, clearly of a

[2] But see the experiments of J. Jastrow and me: "On Small Differences of Sensation" in the *Memoirs of the National Academy of Sciences*. Vol. III.

different nature from any others which do possess just these properties. They alone deserve to be called *reasonings*; and if the reasoner is conscious, even vaguely, of what his guiding principle is, his reasoning should be called a *logical argumentation.* There are, however, cases in which we are conscious that a belief has been determined by another given belief, but are not conscious that it proceeds on any general principle. Such is St. Augustine's "*cogito, ergo sum.*" Such a process should be called, not a reasoning but an *acritical inference.* Again, there are cases in which one belief is determined by another, without our being at all aware of it. These should be called *associational suggestions of belief.*

Now the theory of Pragmaticism was originally based, as anybody will see who examines the papers of Nov. 1877 and Jan. 1878, upon a study of that experience of the phenomena of self-control which is common to all grown men and women; and it seems evident that to some extent, at least, it must always be so based. For it is to conceptions of deliberate conduct that Pragmaticism would trace the intellectual purport of symbols; and deliberate conduct is self-controlled conduct. Now control may itself be controlled, criticism itself subjected to criticism; and ideally there is no obvious definite limit to the sequence. But if one seriously inquires whether it is possible that a completed series of actual efforts should have been endless or beginningless (I will spare the reader the discussion), I think he can only conclude that (with some vagueness as to what constitutes an effort) this must be regarded as impossible. It will be found to follow that there are, besides perceptual judgments, original (i.e., indubitable because uncriticized) beliefs of a general and recurrent kind, as well as indubitable acritical inferences.

It is important for the reader to satisfy himself that genuine doubt always has an external origin, usually from surprise; and that it is as impossible for a man to create in himself a genuine doubt by such an act of the will as would suffice to imagine the condition of a mathematical theorem, as it would be for him to give himself a genuine surprise by a simple act of the will.

I beg my reader also to believe that it would be impossible for me to put into these articles over two percent of the pertinent thought which would be necessary in order to present the subject as I have worked it out. I can only make a small selection of what it seems most desirable to submit to his judgment. Not only must all steps be omitted which he can be expected to supply for himself, but unfortunately much more that may cause him difficulty.

Character II. I do not remember that any of the old Scotch philosophers ever undertook to draw up a complete list of the original beliefs, but they certainly thought it a feasible thing, and that the list would hold good for the minds of all men from Adam down. For in those days Adam was an undoubted historical personage. Before any waft of the air of evolution had reached those coasts how could they think otherwise? When I first wrote, we were hardly orientated in the new ideas, and my impression was that the indubitable propositions changed with a thinking man from year to year. I made some studies

preparatory to an investigation of the rapidity of these changes, but the matter was neglected, and it has been only during the last two years that I have completed a provisional inquiry which shows me that the changes are so slight from generation to generation, though not imperceptible even in that short period, that I thought to own my adhesion, under inevitable modification, to the opinion of that subtle but well-balanced intellect, Thomas Reid, in the matter of Common Sense (as well as in regard to immediate perception, along with Kant).[3]

Character III. The Scotch philosophers recognized that the original beliefs, and the same thing is at least equally true of the acritical inferences, were of the general nature of instincts. But little as we know about instincts, even now, we are much better acquainted with them than were the men of the XVIIIth century. We know, for example, that they can be somewhat modified in a very short time. The great facts have always been known; such as that instinct seldom errs, while reason goes wrong nearly half the time, if not more frequently. But one thing the Scotch failed to recognize is that the original beliefs only remain indubitable in their application to affairs that resemble those of a primitive mode of life. It is, for example, quite open to reasonable doubt whether the motions of electrons are confined to three dimensions, although it is good methodeutic to presume that they are until some evidence to the contrary is forthcoming. On the other hand, as soon as we find that a belief shows symptoms of being instinctive, although it may seem to be dubitable, we must suspect that experiment would show that it is not really so; for in our artificial life, especially in that of a student, no mistake is more likely than that of taking a paper-doubt for the genuine metal. Take, for example, the belief in the criminality of incest. Biology will doubtless testify that the practice is unadvisable; but surely nothing that it has to say could warrant the intensity of our sentiment about it. When, however, we consider the thrill of horror which the idea excites in us, we find reason in that to consider it to be an instinct; and from that we may infer that if some rationalistic brother and sister were to marry, they would find that the conviction of horrible guilt could not be shaken off.

In contrast to this may be placed the belief that suicide is to be classed as murder. There are two pretty sure signs that this is not an instinctive belief. One is that it is substantially confined to the Christian world. The other is that when it comes to the point of actual self-debate, this belief seems to be completely expunged and ex-sponged from the mind. In reply to these powerful arguments, the main points urged are the authority of the Fathers of the Church and the

[3] I wish I might hope, after finishing some more difficult work, to be able to resume this study and go to the bottom of the subject, which needs the qualities of age and does not call upon the powers of youth. A great range of reading is necessary; for it is the belief men *betray* and not that which they *parade* which has to be studied.

undoubtedly intense instinctive clinging to life. The latter phenomenon is, however, entirely irrelevant. For though it is a wrench to part with life, which has its charms at the very worst, just as it is to part with a tooth, yet there is no *moral* element in it whatever. As to the Christian tradition, it may be explained by the circumstances of the early Church. For Christianity, the most terribly earnest and most intolerant of religions (see *The Book of Revelations of St. John the Divine*), – and it remained so until diluted with civilization, – recognized no morality as worthy of an instant's consideration except Christian morality. Now the early Church had need of martyrs, i.e., witnesses, and if any man had done with life, it was abominable infidelity to leave it otherwise than as a witness to its power. This belief, then, should be set down as dubitable; and it will no sooner have been pronounced dubitable, than Reason will stamp it as false.

The Scotch School appears to have no such distinction, concerning the limitations of indubitability and the consequent limitations of the jurisdiction of original belief.

Character IV. By all odds, the most distinctive character of the Critical Common-sensist, in contrast to the old Scotch philosopher, lies in his insistence that the acritically indubitable is invariably vague.

Logicians have been at fault in giving Vagueness the go-by, so far as not even to analyze it. The present writer has done his best to work out the Stechiology (or Stoicheiology), Critic, and Methodeutic of the subject, but can here only give a definition or two with some proposals respecting terminology.

Accurate writers have apparently made a distinction between the *definite* and the *determinate*. A subject is *determinate* in respect to any character which inheres in it or is (universally and affirmatively) predicated of it, as well as in respect to the negative of such character, these being the very same respect. In all other respects it is *indeterminate*. The *definite* shall be defined presently. A sign (under which designation I place every kind of thought, and not alone external signs) that is in any respect objectively indeterminate (i.e., whose object is undetermined by the sign itself) is objectively *general* in so far as it extends to the interpreter the privilege of carrying its determination further.[4]

[4] Hamilton and a few other logicians understood the subject of a universal proposition in the collective sense; but every person who is well-read in logic is familiar with many passages in which the leading logicians explain with an iteration that would be superfluous if all readers were intelligent that such subject is distributively not collectively general. A term denoting a collection is singular and such a term is an "abstraction" or product of the operation of hypostatic abstraction as truly as is the name of the essence. "Mankind" is quite as much an abstraction and *ens rationis* as is "humanity." Indeed, every object of a conception is either a signate individual or some kind of indeterminate individual. Nouns in the plural are usually distributive and general; common nouns in the singular are usually indefinite.

Example: "Man is mortal." To the question, What man? the reply is that the proposition explicitly leaves it to you to apply its assertion to what man or men you will. A sign that is objectively indeterminate in any respect is objectively *vague* in so far as it reserves further determination to be made in some other conceivable sign, or at least does not appoint the interpreter as its deputy in this office. *Example:* "A man whom I could mention seems to be a little conceited." The *suggestion* here is that the man in view is the person addressed; but the utterer does not authorize such an interpretation or *any* other application of what she says. She can still say, if she likes, that she does *not* mean the person addressed. Every utterance naturally leaves the right of further exposition in the utterer; and therefore, in so far as a sign is indeterminate, it is vague, unless it is expressly or by a well-understood convention rendered general. Usually, an affirmative predication covers *generally* every essential character of the predicate, while a negative predication *vaguely* denies some essential character. In another sense, honest people, when not joking, intend to make the meaning of their words determinate, so that there shall be no latitude of interpretation at all. That is to say, the character of their meaning consists in the implications and non-implications of their words; and they intend to fix what is implied and what is not implied. They believe that they succeed in doing so, and if their chat is about the theory of numbers, perhaps they may. But the further their topics are from such presciss, or "abstract," subjects, the less possibility is there of such precision of speech. In so far as the implication is not determinate, it is usually left vague; but there are cases where an unwillingness to dwell on disagreeable subjects causes the utterer to leave the determination of the implication to the interpreter; as if one says, "That creature is filthy, in every sense of the term."

Perhaps a more scientific pair of definitions would be that anything is *general* in so far as the principle of excluded middle does not apply to it and is *vague* in so far as the principle of contradiction does not apply to it. Thus, although it is true that "Any proposition you please, *once you have determined its identity*, is either true or false"; yet *so long as it remains indeterminate and so without identity*, it need neither be true that any proposition you please is true, nor that any proposition you please is false. So likewise, while it is false that "A proposition *whose identity I have determined* is both true and false," yet until it is determinate, it may be true that a proposition is true and that a proposition is false.

In those respects in which a sign is not vague, it is said to be *definite*, and also with a slightly different mode of application, to be *precise*, a meaning probably due to *præcisus* having been applied to *curt* denials and refusals. It has been the well-established, ordinary sense of *precise* since the Plantagenets; and it were much to be desired that this word, with its derivates *precision*, *precisive*, etc., should, in the dialect of philosophy, be restricted to this sense. To express the act of *rendering precise* (though usually only in reference to

numbers, dates, and the like), the French have the verb *préciser*, which, after the analogy of *décider*, should have been *précider*. Would it not be a useful addition to our English terminology of logic, to adopt the verb *to precide*, to express the general sense, to render precise? Our older logicians with salutary boldness seem to have created for their service the verb *to prescind*, the corresponding Latin word meaning only to "cut off at the end," while the English word means to suppose without supposing some more or less determinately indicated accompaniment. In geometry, for example, we "prescind" shape from color, which is precisely the same thing as to "abstract" color from shape, although very many writers employ the verb "to abstract" so as to make it the equivalent of "prescind." But whether it was the invention or the courage of our philosophical ancestors which exhausted itself in the manufacture of the verb "prescind," the curious fact is that instead of forming from it the noun *prescission*, they took pattern from the French logicians in putting the word *precision* to this second use. About the same time[5] [See Watts's *Logick*, 1725, I, vi, 9 *ad fin.*], the adjective *precisive* was introduced to signify what *prescissive* would have more unmistakably conveyed. If we desire to rescue the good ship Philosophy for the service of Science from the hands of lawless rovers of the sea of literature, we shall do well to keep prescind, presciss, prescission, and prescissive on the one hand, to refer to dissection in hypothesis, while precide, precise, precision, and precisive are used so as to refer exclusively to an expression of determination which is either full or made free for the interpreter. We shall thus do much to relieve the stem "abstract" from staggering under the double burden of conveying the idea of prescission as well as the unrelated and very important idea of the creation of an *ens rationis* out of an *ἔπος τερόεν*, – to filch the phrase to furnish a name for an expression of non-substantive thought, – an operation that has been treated as a subject of ridicule, – this hypostatic abstraction, – but which gives mathematics half its power.

The purely formal conception that the three affections of terms, *determination*, *generality*, and *vagueness* form a group dividing a category of what Kant calls "functions of judgment" will be passed by as unimportant by those who have yet to learn how important a part purely formal conceptions may play in philosophy. Without stopping to discuss this, it may be pointed out that the "quantity" of propositions in logic, that is, the distribution of the *first* subject,[6] is either *singular* (that is, determinate, which renders it substantially

[5] But unfortunately it has not been in the writer's power to consult the *Oxford Dictionary* concerning these words; so that probably some of the statements in the text might be corrected with the aid of that work.

[6] Thus returning to the writer's original nomenclature, in spite of *Monist* VII, 209, where an obviously defective argument was regarded as sufficient to determine a mere matter of terminology. But the Quality of propositions is there regarded from a point of view

negligible in formal logic), or *universal* (that is, general), or *particular* (as the mediaeval logicians say, that is, vague or *indefinite*). It is a curious fact that in the logic of relations it is the first and last quantifiers of a proposition that are of chief importance. To affirm of anything that it is a horse is to yield to it *every* essential character of a horse: to deny of anything that it is a horse is vaguely to refuse to it *some* one or more of those essential characters of the horse. There are, however, predicates that are unanalyzable in a given state of intelligence and experience. These are, therefore, determinately affirmed or denied. Thus, this same group of concepts reappears. Affirmation and denial are in themselves unaffected by these concepts, but it is to be remarked that there are cases in which we can have an apparently definite idea of a border line between affirmation and negation. Thus, a point of a surface may be in a region of that surface, or out of it, or on its boundary. This gives us an indirect and vague conception of an intermediacy between affirmation and denial in general, and consequently of an intermediate, or nascent state, between determination and indetermination. There must be a similar intermediacy between generality and vagueness. Indeed, in an article in the seventh volume of *The Monist*, pp. 205–217, there lies just beneath the surface of what is explicitly said, the idea of an endless series of such *intermediacies*. We shall find below some application for these reflections.

Character V. The Critical Common-sensist will be further distinguished from the old Scotch philosopher by the great value he attaches to doubt, provided only that it be the weighty and noble metal itself, and no counterfeit nor paper substitute. He is not content to ask himself whether he does doubt, but he invents a plan for attaining to doubt, elaborates it in detail, and then puts it into practice, although this may involve a solid month of hard work; and it is only after having gone through such an examination that he will pronounce a belief to be indubitable. Moreover, he fully acknowledges that even then it may be that some of his indubitable beliefs may be proved false.

The Critical Common-sensist holds that there is less danger to heuretic science in believing too little than in believing too much. Yet for all that, the consequences to heuretics of believing too little may be no less than disaster.

Character VI. Critical Common-sensism may fairly lay claim to this title for two sorts of reasons; namely, that on the one hand it subjects four opinions to rigid criticism: its own; that of the Scotch school; that of those who would base logic or metaphysics on psychology or any other special science, the least tenable of all the philosophical opinions that have any vogue; and that of Kant; while on the other hand it has besides some claim to be called Critical from the fact that it is but a modification of Kantism. The present writer was

which seems extrinsic. I have not had time, however, to re-explore all the ramifications of this difficult question by the aid of existential graphs, and the statement in the text about the last quantifier may need modification.

a pure Kantist until he was forced by successive steps into Pragmaticism. The Kantist has only to abjure from the bottom of his heart the proposition that a thing-in-itself can, however indirectly, be conceived; and then correct the details of Kant's doctrine, and he will find himself to have become a Critical Common-sensist.

Another doctrine which is involved in Pragmaticism as an essential consequence of it, but which the writer defended (*J. Spec. Phil.*, Vol. II, p. 155 *ad fin.* 1868, and *N. Am. Rev.*, Vol. CXIII, pp. 449–472, 1871) before he had formulated, even in his own mind, the principle of pragmaticism, is the scholastic doctrine of realism. This is usually defined as the opinion that there are real objects that are general, among the number being the modes of determination of existent singulars, if, indeed, these be not the only such objects. But the belief in this can hardly escape being accompanied by the acknowledgment that there are, besides, real *vagues*, and especially, real *possibilities*. For possibility being the denial of a necessity, which is a kind of generality, is vague like any other contradiction of a general. Indeed, it is the reality of some possibilities that pragmaticism is most concerned to insist upon. The article of Jan. 1878 endeavored to gloze over this point as unsuited to the exoteric public addressed; or perhaps the writer wavered in his own mind. He said that if a diamond were to be formed in a bed of cotton-wool, and were to be consumed there without ever having been pressed upon by any hard edge or point, it would be merely a question of nomenclature whether that diamond should be said to have been hard or not. No doubt, this is true, except for the abominable falsehood in the word MERELY, implying that symbols are unreal. Nomenclature involves classification; and classification is true or false, and the generals to which it refers are either reals in the one case, or figments in the other. For if the reader will turn to the original maxim of pragmaticism at the beginning of this article, he will see that the question is, not what *did* happen, but whether it would have been well to engage in any line of conduct whose successful issue depended upon whether that diamond *would* resist an attempt to scratch it, or whether all other logical means of determining how it ought to be classed *would* lead to the conclusion which, to quote the very words of that article, would be "the belief which alone could be the result of investigation carried *sufficiently far*." Pragmaticism makes the ultimate intellectual purport of what you please to consist in conceived conditional resolutions, or their substance; and therefore, the conditional propositions, with their hypothetical antecedents, in which such resolutions consist, being of the ultimate nature of meaning, must be capable of being true, that is, of expressing whatever there be which is such as the proposition expresses, independently of being thought to be so in any judgment, or being represented to be so in any other symbol of any man or men. But that amounts to saying that possibility is sometimes of a real kind.

Fully to understand this, it will be needful to analyze modality, and ascertain in what it consists. In the simplest case, the most subjective meaning, if a person does not know that a proposition is false, he calls it *possible*. If, however, he knows that it is *true*, it is much more than possible. Restricting the word to its characteristic applicability, a state of things has the Modality of the possible, – that is, of the merely possible, – only in case the contradictory state of things is likewise possible, which proves possibility to be the vague modality. One who knows that Harvard University has an office in State Street, Boston, and has impression that it is at No. 30, but yet suspects that 50 is the number, would say "I think it is at No. 30, but it *may be* at No. 50," for "it *is possibly* at No. 50." Thereupon, another, who does not doubt his recollection, might chime in, "It *actually is* at No. 50," or simply "it *is* at No. 50," or "it *is* at No. 50, *de inesse*." Thereupon, the person who had first asked what the number was might say, "Since you are so positive, it *must be* at No. 50," or "I know the first figure is 5. So, since we are both certain the second is a 0, why 50 it *necessarily is*." That is to say, in this most subjective kind of Modality, that which is known by direct recollection is in the Mode of *Actuality*, the determinate mode. But when knowledge is indeterminate among alternatives, either there is one state of things which alone accords with them all, when this is in the Mode of *Necessity*, or there is more than one state of things that no knowledge excludes, when each of these is in the Mode of *Possibility*.

Other kinds of subjective Modality refer to a Sign or Representamen which is assumed to be true, but which does not include the Utterer's (i.e. the speaker's, writer's, thinker's, or other symbolizer's) total knowledge, the different Modes being distinguished very much as above. There are other cases, however, in which, justifiably or not, we certainly think of Modality as objective. A man says, "I *can* go to the seashore if I like." Here is implied, to be sure, his ignorance of how he will decide to act. But this is not the point of the assertion. It is that the complete determination of conduct in the *act* not yet having taken place, the further determination of it belongs to the subject of the action regardless of external circumstances. If he had said, "I *must* go where my employers may send me," it would imply that the function of such further determination lay elsewhere. In "You *may* do so and so," and "You *must* do so," the "may" has the same force as "can" except that in the one case freedom from particular circumstances is in question, and in the other freedom from a law or edict. Hence the phrase, "You *may* if you *can*." I must say that it is difficult for me to preserve my respect for the competence of a philosopher whose dull logic, not penetrating beneath the surface, leaves him to regard such phrases as misrepresentations of the truth. So an act of hypostatic abstraction which in itself is no violation of logic, however it may lend itself to a dress of superstition, may regard the collective tendencies to variableness in the world, under the name of Chance, as at one time having

their way, and at another time overcome by the element of order; so that, for example, a superstitious cashier, impressed by a bad dream, may say to himself on a Monday morning, "*Maybe*, the bank has been robbed." No doubt, he recognizes his total ignorance in the matter. But besides that, he has in mind the absence of any particular cause which should protect his bank more than others that are robbed from time to time. He thinks of the variety in the universe as vaguely analogous to the indecision of a person, and borrows from that analogy the garb of his thought. At the other extreme stand those who declare as inspired (for they have no rational proof of what they allege) that an actuary's advice to an insurance company is based on nothing at all but ignorance.

Here is another example of objective possibility: "A pair of intersecting rays, i.e., unlimited straight lines conceived as movable objects, *can* (or *may*) move, without ceasing to intersect, so that one and the same hyperboloid shall be completely covered by the track of each of them." How shall we interpret this, remembering that the object spoken of, the pair of rays, is a pure creation of the Utterer's imagination, although it is required (and indeed, forced) to conform to the laws of space? Some minds will be better satisfied with a more subjective, or nominalistic, others with a more objective, realistic interpretation. But it must be confessed on all hands that whatever degree or kind of reality belongs to pure space belongs to the substance of that proposition, which merely expresses a property of space.

Let us now take up the case of that diamond which, having been crystallized upon a cushion of jewelers' cotton, was accidentally consumed by fire before the crystal of corundum that had been sent for had had time to arrive, and indeed without being subjected to any other pressure than that of the atmosphere and its own weight. The question is, Was that diamond *really* hard? It is certain that no discernible *actual* fact determined it to be so. But is its hardness not, nevertheless, a *real* fact? To say, as the article of Jan. 1878 seems to intend, that it is just as an arbitrary "usage of speech" chooses to arrange its thoughts, is as much as to decide against the reality of the property, since the real is that which is such as it is regardless of how it is, at any time, thought to be. Remember that this diamond's condition is not an isolated fact. There is no such thing; and an isolated fact could hardly be real. It is an unsevered, though presciss part of the unitary fact of nature. Being a diamond, it was a mass of pure carbon, in the form of a more or less transparent crystal (brittle, and of facile octahedral cleavage, unless it was of an unheard of variety), which, if not trimmed after one of the fashions in which diamonds may be trimmed, took the shape of an octahedron, apparently regular (I need not go into minutiae), with grooved edges, and probably with some curved faces. Without being subjected to any considerable pressure, it could be found to be insoluble, very highly refractive, showing under radium rays (and perhaps under "dark light" and X-rays) a peculiar bluish phosphorescence,

having as high a specific gravity as realgar or orpiment, and giving off during its combustion less heat than any other form of carbon would have done. From some of these properties hardness is believed to be inseparable. For like it they bespeak the high polymerization of the molecule. But however this may be, how can the hardness of all other diamonds fail to bespeak *some* real relation among the diamonds without which a piece of carbon would not be a diamond? Is it not a monstrous perversion of the word and concept *real* to say that the accident of the non-arrival of the corundum prevented the hardness of the diamond from having the *reality* which it otherwise, with little doubt, would have had?

At the same time, we must dismiss the idea that the occult state of things (be it a relation among atoms or something else) which constitutes the reality of a diamond's hardness can possibly consist in anything but in the truth of a general conditional proposition. For to what else does the entire teaching of chemistry relate except to the "behavior" of different possible kinds of material substance? And what does that behavior consist in, except that if a substance of a certain kind should be exposed to an agency of a certain kind, a certain kind of sensible result *would* ensue, according to our experiences hitherto. As for the pragmaticist, it is precisely his position that nothing else than this can be so much as *meant* by saying that an object possesses a character. He is therefore obliged to subscribe to the doctrine of a real Modality, including real Necessity and real Possibility.

A good question, for the purpose of illustrating the nature of Pragmaticism, is, What is Time? It is not proposed to attack those most difficult problems connected with the psychology, the epistemology, or the metaphysics of Time, although it will be taken for granted, as it must be according to what has been said, that Time is real. The reader is only invited to the humbler question of what we mean by Time, and not of every kind of meaning attached to Past, Present, and Future either. Certain peculiar feelings are associated with the three general determinations of Time; but those are to be sedulously put out of view. That the reference of events to Time is irresistible will be recognized; but as to how it may differ from other kinds of irresistibility is a question not here to be considered. The question to be considered is simply, What is the intellectual purport of the Past, Present, and Future? It can only be treated with the utmost brevity.

That Time is a particular variety of Objective Modality is too obvious for argumentation. The Past consists of the sum of *faits accomplis*, and this Accomplishment is the Existential Mode of Time. For the Past really acts upon us, and *that* it does, not at all in the way in which a Law or Principle influences us, but precisely as an Existent object acts. For instance, when a *Nova Stella* bursts out in the heavens, it acts upon one's eyes just as a light struck in the dark by one's own hands would; and yet it is an event which happened before the Pyramids were built. A neophyte may remark that its reaching the

eyes, which is all we know, happens but a fraction of a second before we know it. But a moment's consideration will show him that he is losing sight of the question, which is not whether the distant Past can act upon us *immediately*, but whether it acts upon us just as any Existent does. The instance adduced (certainly a commonplace enough fact) proves conclusively that the mode of the Past is that of Actuality. Nothing of the sort is true of the Future, to compass the understanding of which it is indispensable that the reader should divest himself of his Necessitarianism, – at best, but a scientific theory, – and return to the Common-sense State of Nature. Do you never say to yourself, "I *can* do this or that as well to-morrow as to-day"? Your Necessitarianism is a theoretical pseudo-belief, – a make-believe belief, – that such a sentence does not express the real truth. That is only to stick to proclaiming the unreality of that Time, of which you are invited, be it reality or figment, to consider the meaning. You need not fear to compromise your darling theory by looking out at its windows. Be it true in theory or not, the unsophisticated conception is that everything in the Future is either *destined*, i.e., necessitated already, or is *undecided*, the contingent future of Aristotle. In other words, it is not Actual, since it does not act except through the idea of it, that is, as a law acts; but is either Necessary or Possible, which are of the same mode since (as remarked above) Negation being outside the category of Modality cannot produce a variation in Modality. As for the Present instant, it is so inscrutable that I wonder whether no sceptic has ever attacked its reality. I can fancy one of them dipping his pen in his blackest ink to commence the assault, and then suddenly reflecting that his entire life is in the Present, – the "living present," as we say, – this instant when all hopes and fears concerning it come to their end, this Living Death in which we are born anew. It is plainly that Nascent State between the Determinate and the Indeterminate that was noticed above.

Pragmaticism consists in holding that the purport of any concept is its conceived bearing upon our conduct. How, then, does the Past bear upon conduct? The answer is self-evident: whenever we set out to do anything, we "go upon," we base our conduct on facts already known, and for these we can only draw upon our memory. It is true that we may institute a new investigation for the purpose; but its discoveries will only become applicable to conduct after they have been made and reduced to a memorial maxim. In short, the Past is the sole storehouse of all our knowledge.

When we say that we know that some state of things exists, we mean that it used to exist, whether just long enough for the news to reach the brain and be retransmitted to tongue or pen, or longer ago. Thus, from whatever point of view we contemplate the Past, it appears as the Existential Mode of Time.

How does the Future bear upon conduct? The answer is that future facts are the only facts that we can, in a measure, control; and whatever there may be in the Future that is not amenable to control are the things that we *shall* be able

to infer, or *should* be able to infer under favorable circumstances. There may be questions concerning which the pendulum of opinion never would cease to oscillate, however favorable circumstances may be. But if so, those questions are *ipso facto* not *real* questions, that is to say, are questions to which there is no true answer to be given. It is natural to use the future tense (and the conditional mood is but a mollified future) in drawing a conclusion or in stating a consequence. "If two unlimited straight lines in one plane are crossed by a third making the sum … then these straight lines *will* meet on the side, etc." It cannot be denied that acritical inferences may refer to the Past in its capacity as past; but according to Pragmaticism, the conclusion of a Reasoning proper must refer to the Future. For its meaning refers to conduct, and since it is a reasoned conclusion must refer to deliberate conduct, which is controllable conduct. But the only controllable conduct is Future conduct. As for that part of the Past that lies beyond memory, the Pragmaticist doctrine is that the meaning of its being believed to be in connection with the Past consists in the acceptance as truth of the conception that we ought to conduct ourselves according to it (like the meaning of any other belief). Thus, a belief that Christopher Columbus discovered America really refers to the Future. It is more difficult, it must be confessed, to account for beliefs that rest upon the double evidence of feeble but direct memory and upon rational inference. The difficulty does not seem insuperable; but it must be passed by.

What is the bearing of the Present instant upon conduct?

Introspection is wholly a matter of inference. One is immediately conscious of his Feelings, no doubt; but not that they are feelings of an *ego*. The *self* is only inferred. There is no time in the Present for any inference at all, least of all for inference concerning that very instant. Consequently the present object must be an external object, if there be any objective reference in it. The attitude of the Present is either conative or perceptive. Supposing it to be perceptive, the perception must be immediately known as external, – not indeed in the sense in which a hallucination is *not* external, but in the sense of being present regardless of the perceiver's will or wish. Now this kind of externality is conative externality. Consequently, the attitude of the present instant (according to the testimony of Common Sense, which is plainly adopted throughout) can only be a Conative attitude. The consciousness of the Present is then that of a struggle over what shall be; and thus we emerge from the study with a confirmed belief that it is the Nascent State of the Actual.

But how is Temporal Modality distinguished from other Objective Modality? Not by any general character since Time is unique and *sui generis*. In other words there is only one Time. Sufficient attention has hardly been called to the surpassing truth of this for Time as compared with its truth for Space. Time, therefore, can only be identified by brute compulsion. But we must not go further.

THE BASIS OF PRAGMATICISM

Charles S. Peirce. "The Basis of Pragmaticism." MS 283, January 1906.

This is one of many attempts by Peirce to write an essay entitled "The Basis of Pragmaticism." This version was composed in January 1906. The text is based on the manuscript listed as MS 283 in Richard S. Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* and preserved in the Houghton Library, Harvard University. The text below begins with the second section; the first section is omitted because the essential two-thirds of it are no longer extant.

Portion I. Introductory.

§2. The word "science" has three principal acceptions, to wit:

Firstly, men educated in Jesuit and similar colleges often use the term in the sense of the Greek *ἐπιστήμη*, the Latin *scientia*; that is to say, to denote knowledge for certain. (Fuller explanations are given in the *Index Aristotelicus* of Bonitz.)

Secondly, since the beginning of the XIXth century, when Coleridge so defined it in the opening dissertation to the *Encyclopaedia Metropolitana*, non-scientific people have generally understood "science" to mean systematized knowledge.

Thirdly, in the mouths of scientific men themselves "science" means the concrete body of their own proper activities, in seeking such truth as seems to them highly worthy of life-long devotion, and in pursuing it by the most critically chosen methods, including all the help both general and special that they can obtain from one another's information and reflexion.

The present writer will call science in this third sense *heuretic science*; he will call science which differs from this in all the important respects which result from investigation being pursued, not because of the august nature of the truth sought, but for the sake of some anticipated utility of it to some man or men, *practical science*, and he will call science in the Coleridgian sense *retrospective science*.

It is to be remarked that although heuretic scientists look upon their work as purely theoretical, and many of them feel a utilitarian application, even of the highest kind, is comparatively lacking in the sacredness of pure science, they are nevertheless particularly given to thinking of their results as affording

possible conditions for new experiments, if not in the narrower, then in the broader sense of the term,[1] although they may have the vaguest possible notions of what those experiments may be. This shows that regarding a truth as purely theoretical does not prevent its being regarded as a possible determinant of conduct.

§3. Two meanings of the term "philosophy" call for our particular notice. The two meanings agree in making philosophical knowledge positive, that is, in making it a knowledge of things real, in opposition to mathematical knowledge, which is a knowledge of the consequences of arbitrary hypotheses; and they further agree in making philosophical truth extremely general. But in other respects they differ as widely as they well could. For one of them, which is better entitled (except by usage) to being distinguished as *philosophia prima* than is ontology, embraces all that positive science which rests upon familiar experience and does not search out occult or rare phenomena; while the other, which has been called *philosophia ultima*, embraces all that truth which is derivable by collating the results of the different special sciences, but which is too broad to be perfectly established by any one of them. The former is well named by Jeremy Bentham's term *cenoscopy* (κοινοσκοπιά, the lookout upon the common), the latter goes by the name of *synthetic philosophy*. Widely different as the two sciences are, they are frequently confounded and intertangled; and when they are distinguished the question is often asked, 'Which of these is the true philosophy?' as if an appreciation of one necessarily involved a depreciation of the other. In the writer's opinion each is an important study. Cenoscopy should be that department of heuretic science which stands next after Mathematics, and before Idioscopy, or special science; while Synthetic Philosophy, the subject upon which Francis Bacon, Auguste Comte, William Whewell, and Herbert Spencer have left us admirable works in their several ways, stands at the head of the Retrospective Sciences.

A sound methodeutic requires heuretic science to found its researches upon cenoscopy, passing with as slight a gap as possible from the familiar to the unfamiliar.

§4. The method of cenoscopic research presents a certain difficulty. In commencing it we are confronted with the fact that we already believe a great many things. These beliefs, or at least the more general of them, ought to be reconsidered with deliberation. This implies that it should be conducted according to a deliberate plan adopted only after the severest criticism. Indeed, nothing in cenoscopy should be embraced without criticism. Each

[1] An experiment in the narrow sense is where special conditions of experience are purposely created; but any observation made to test a hypothesis is an experiment in the broader sense. Such is an observation of an occultation to test the lunar tables.

criticism should wait to be planned, and each plan should wait for criticism. Clearly, if we are to get on at all, we must put up with imperfect procedure.

The only practicable method is that of the inductive sciences, the method of trying key after key until we find one that fits. Only, energy should not be wasted in even trying a key without a rational hope of its being the sound one. The reflective reader may find reason to suspect that the writer has bestowed no little thought upon this. In truth, such a world of different considerations jostle one another in his memory that it will be best to pass them all by in so brief a *résumé*. Let us rather ask what former thinkers had done toward setting our cogitations upon some smoothly running track of ratiocination.

§5. The idea of growth, – the stately tree springing from the tiny grain, – was the key that Aristotle brought to be tried upon this intricate grim lock. In such trials he came upon those wonderful conceptions, *δύναμις* and *ἐνέργεια*, *ὕλη* and *μορφή* or *εἶδος*, or, as he might still better have said, *τύπος*, the blow, the *coup*. […] This idea of Aristotle's has proved marvellously fecund; and in truth it is the only idea covering quite the whole area of cenoscopy that has shown any marked uberosity. Many and many a century is likely to sink in Time's flood, and be buried in the mud of Lethe, before the achievements of the nineteenth shall get matched. But of all those achievements, the greatest in the eye of reason, that of bringing to light the supremacy of the element of *Growth*, was, after all, nothing but a special application of Aristotle's pure vision.

Let us lose sight of no side of it; *Growth*, – the idea, – the act, – the lifegiving principle.

One special feature of growth has always received great attention; yet its lessons are far from having today been completely learned. It is that growth cannot proceed very far until those elements of it which constitute the functions of the two sexes get well separated. The female function, the function of the seed, has always been recognized as the *δύναμις*. The female is the general and essential sex; the male merely executes a hunch, the *τύπος* of the *μορφή*. It is the principle of unrest. But do not forget that the seed needs to be left to itself to grow as far as it can alone, before the *coup* of fertilization disturbs it. In order that it could so have grown alone, and indeed, in low organisms have reached the height of their attained potentiality, the female must have had an admixture of the restless. Pure femininity is not to be found even in the nucleus of the crystal of alum quietly growing out of its evaporating solution. Pure femininity can be conceived in a general way, but it cannot be realized even in consistent imagination. As for pure masculinity, it is an absurdity and nonsense, *vox et praeterea nihil*.

Besides those two requisites of perfecting growth, there is a third, not implied in either of them, nor in both together. It is the congress of those two. It is something demonstrably additional to them. When this comes a new life begins.

Now apply these ideas to knowledge. Observe that this will itself be an act of copulation. There is nothing in the feminine conception of knowledge, nor in the masculine conception of sexuality, to prove that there will be any fruit for philosophy in bringing them together. An incomprehensible instinct urges us to it; nothing else.

The seed of knowledge is the mind, the field of available consciousness, – all that is present or that can be called up. The rude *τύπος* is experience. He who may not have felt quite sure of understanding why the entrance of the element of *Form* should be [so] called will find enlightenment in thinking of the matter from this point of view.

Portion II. Sketch of Cenoscopy.

§6. The business of cenoscopy is to construct, as best one may, a true comprehension of the *omne*, – and if possible, of the *totum*, – of being and of non-being, and of the principal divisions of this *omne*.

How shall we lay out this business?

Let us not lose all possibility of advantage from the Aristotelian key merely because we cannot be quite sure, in advance of the essay, that it will fit.

Cenoscopy is not to resort to special experience, or only upon the most exceptional occasions, in order not to break the discussion of one question. There is no veritable exception. To say that cenoscopy is not to resort to special experience is to say that it is to be science in the seminal condition. Yet it could have no logic at all unless both of the sexual elements, together with the third that springs from their union, were all present.

Hence comes the suggestion that Cenoscopy should have three divisions, – a suggestion that further considerations, that cannot here be set forth, amply confirm. It will be well to state what these divisions are.

§7. Metaphysics is the proper designation for the third and completing department of cenoscopy, which in places welds itself into idioscopy, or special science. Its business is to study the most general features of reality and real objects. But in its present condition it is, even more than the other branches of cenoscopy, a puny, rickety, and scrofulous science. It is only too plain that those who pretend to cultivate it carry not the hearts of true men of science within their breast. Instead of striving with might and main to find out what errors they have fallen into, and exulting joyously at every such discovery, they are scared to look Truth in the face. They turn tail and flee her. Only a small number out of the great catalogue of problems which it is their business to solve have they ever taken up at all, and those few most feebly. Here let us set down almost at random a small specimen of the questions of metaphysics which press, not for hasty answers, but for industrious and solid investigation: Whether or no there be any real indefiniteness, or real possibility and impossibility? Whether or not there is any definite

indeterminacy? Whether there be any strictly individual existence? Whether there is any distinction, other than one of more and less, between fact and fancy? Or between the external and the internal worlds? What general explanation or account can be given of the different qualities of feeling and their apparent connection with determinations of mass, space, and time? Do all possible qualities of sensation, including of course a much vaster variety of which we have no experience than of those which we know, form one continuous system, as colors seem to do? What external reality do the qualities of sense represent, in general? Is Time a real thing, and if not, what is the nature of the reality that it represents? How about Space, in these regards? How far, and in what respects, is Time external, or does it have immediate contents that are external? Are Time and Space continuous? What numerically are the Chorisy, Cyclosy, Periphraxy, and Apeiry of Space? Has Time, or has Space, any limit or node? Is *hylozoism* an opinion, actual or conceivable, rather than a senseless vocable; and if so, what is, or would be, that opinion? What is consciousnesss or mind like; meaning, is it a single continuum like Time and Space, which is for different purposes variously broken up by that which it contains; or is it composed of solid atoms, or is it more like a fluid? Has Truth, in Kantian phrase, any "material" characteristics in general, by which it can with any degree of probability be recognized? Is there, for example, any general tendency in the course of events, any progress in one direction on the whole?

While a summary study of metaphysics will suffice to dispose of its problems, so far as they could disturb the course of ordinary scientific researches, there are sundry branches of science, and they are mostly particularly interesting branches to human curiosity, – psychology, for example, and psychical research, and on the other wing of idioscopy, molecular and corpuscular physics, radio-activity, physical geometry, and so on, – which cannot escape entirely.

§8. Normative Science forms the mid portion of cenoscopy and its most characteristic part. In any adequate exposition of the *rationale* of pragmaticism, this present Section, the eighth, would be particularly important, not so much for any especially definite ratiocination that it would have to unfold, as because it would serve to convey the reader into the intellectual clime, and for that matter to the very field where the operations of our argumentation are to be executed and our encounter with hard fact waged. He ought to be transported hither through the empyrean of pure thought as calmly as in the basket of a balloon, whence eye might sweep the general map of philosophy. It is a grievous shame and imposition that the reader should instead have to traverse this space, so full of marvels and of beauties, as in a night train, pent up in this cramped Section, obscure and airless. It is much to be feared that it will prove to be more veritably a "sleeper" than any place of torment to which Pullman ever consigned him.

The topics which have mainly to be considered in this Section suggest its division into three parts, as follows:

(A) Of Normative Science as an indispensible preliminary, propedeutic, and prolegomenon to Metaphysics.

(B) Of the hard dualism of Normative Science and whence it comes.

(C) Of the nature of Normative Science, as entirely distinct from practical science, though it tends to produce this, and as affording a basis for psychology and consequently in no degree itself resting upon psychology. In what sense it is a science of Mind, at all. Its approaches to Mathematics must also be discussed.

A. It would be folly to attack the fastnesses of the arcana of Metaphysics, with all their barbed wire entanglements, without having thoroughly considered beforehand the nature of the reasoning to be employed and the source of its validity. This is the most obvious reason for making one normative science antecede metaphysics; and it is also the most available reason and the one most suited to governing the dispositions of the elements of the research. It is not the strongest reason by a good deal. The strongest reason is that most of the metaphysical conceptions, such as Substance, Quality, Relation, Potentiality, Law, Causation, etc. are nothing but logical conceptions applied to real objects, and can only attain elucidation in logical study. But it is not convenient to prove this in advance, nor does it suggest the best arrangement until logic has actually been fathomed to its very bottom.

Logic regarded from one instructive, though partial and narrow, point of view, is the theory of deliberate thinking. To say that any thinking is deliberate is to imply that it is controlled with a view to making it conform to a purpose or ideal. Thinking is universally acknowledged to be an active operation. Consequently, the control of thinking with a view to its conformity to a standard or ideal is a special case of the control of action to make it conform to a standard; and the theory of the former must be a special determination of the theory of the latter. Now special theories should always be made to rest upon the general theories of which they are amplifications. The present writer takes the theory of the control of conduct, and of action in general, so as to conform to an ideal, as being the mid-normative science; that is, as the second of the trio, and as that one of the three sciences in which the distinctive characters of normative science are most strongly marked. He will not undertake to pronounce any other distribution of the matter of normative science to be wrong; but according to the dissection of that matter which seems to him to separate studies as they must be separated in research, such will be the mid-normative science. Since the normative sciences are usually held to be three, Esthetics, Ethics, and Logic, and since he, too, makes them three, he would term the mid-normative science ethics if this did not seem to be forbidden by the received acception of that term. He accordingly proposes

to name the mid-normative science, as such (whatever its content may be), *Antethics*, that is, that which is put in place of ethics, the usual second member of the trio. It is the writer's opinion that this *antethics* should be the theory of the conformity of action to an ideal. Its name, as such, will naturally be *practics*. Ethics is not practics; first, because ethics involves more than the theory of such conformity; namely it involves the theory of the ideal itself, the nature of the *summum bonum*; and secondly, because, in so far as *ethics* studies the conformity of conduct to an ideal, it is limited to a particular ideal, which, whatever the professions of moralists may be, is in fact nothing but a sort of composite photograph of the conscience of the members of the community. In short, it is nothing but a traditional standard, accepted, very wisely, without radical criticism, but with a silly pretence of critical examination. The science of morality, virtuous conduct, right living, can hardly claim a place among the heuretic sciences.

It has been a great, but frequent, error of writers on ethics to confound an ideal of conduct with a motive to action. The truth is that these two objects belong to different categories. Every action has a motive; but an ideal only belongs to a line of conduct which is deliberate. To say that conduct is deliberate implies that each action, or each important action, is reviewed by the actor and that his judgment is passed upon it, as to whether he wishes his future conduct to be like that or not. His ideal is the kind of conduct which attracts him upon review. His self-criticism followed by a more or less conscious resolution that in its turn excites a determination of his habit, will, with the aid of the sequelae, *modify* a future action; but it will not generally be a moving cause to action. It is an almost purely passive liking for a way of doing whatever he may be moved to do. Although it affects his own conduct, and nobody else's, yet the quality of feeling (for it is merely a quality of feeling) is just the same, whether his own conduct or that of another person real or imaginary is the object of the feeling, or whether it be connected with the thought of any action or not. If conduct is to be thoroughly deliberate, the ideal must be a habit of feeling which has grown up under the influence of a course of self-criticisms and of heterocriticisms; and the theory of the deliberate formation of such habits of feeling is what ought to be meant by *esthetics*. It is true that the Germans, who invented the word, and have done the most toward developing the science, limit it to *taste*, that is, to the action of the *Spieltrieb*, from which deep and earnest emotion would seem to be excluded. But in the writer's opinion, the theory is the same whether it be a question of forming a taste in bonnets or of a preference between electrocution and decapitation, or between supporting one's family by agriculture or by highway robbery. The difference of earnestness is of vast practical moment; but it has nothing to do with heuretic science.

According to this view, Esthetics, Practics, and Logic form one distinctly marked whole, one separate department of heuretic science; and the question

where precisely the lines of separation between them are to be drawn is quite secondary. It is clear, however, that esthetics relates to feeling, practics to action, logic to thought.

B. A *state of things* is an abstract constituent part of reality, of such a nature that a proposition is needed to represent it. There is but one *individual*, or completely determinate, state of things, namely, the all of reality. A *fact* is so highly a prescissively abstract state of things, that it can be wholly represented in a simple proposition, and the term "simple," here, has no absolute meaning, but is merely a comparative expression.

A *mathematical form* of a state of things is such a representation of that state of things as represents only the samenesses and diversities involved in that state of things without definitely qualifying the subjects of the samenesses and diversities. It represents not necessarily all of these; but if it does represent all, it is the *complete* mathematical form. Every mathematical form of a state of things is the complete mathematical form of *some* state of things. The complete mathematical form of any state of things, real or fictitious, represents every ingredient of that state of things except the qualities of feeling connected with it. It represents whatever importance or significance those qualities may have; but the qualities themselves it does not represent.

Before any conclusion shall be made to rest upon this almost self-evident proposition, a way of setting it quite beyond doubt shall be explained. As at present enunciated, it is merely put forward as a private opinion of the writer's which will serve to explain the great interest he attaches to emphatic dualism of the three normative sciences, which may be regarded as being the sciences of the conditions of truth and falsity, of wise and foolish conduct, of attractive and repulsive ideas. Should the reader become convinced that the importance of everything resides entirely in its mathematical form, he, too, will come to regard this dualism as worthy of close attention. Meantime, that it exists, and is more marked in these sciences than in any others, is an indisputable fact. To what is this circumstance to be attributed? Skipping the easy reasoning by which it can be shown that this dualism cannot be due to any peculiar quality of feeling that may be connected with these sciences, nor to any intellectual peculiarity of them, which negative propositions will become obtrusively plain at a later stage of our reasoning, we may turn at once to the affirmative reason for attributing the dualism to the reference of the normative sciences to action. It is curious how this reason seems to seek to escape detection, by putting forward an apparent indication that it is not there. For it is evident that it is in esthetics that we ought to seek for the deepest characteristics of normative science, since esthetics in dealing with the very ideal itself, whose mere materialization engrosses the attention of practics and of logic, must contain the heart, soul, and spirit of normative science. But that dualism which is so much marked in the True and False, logic's object of

study, and in the Useful and Pernicious of the confessional of practics, is softened almost to obliteration in esthetics. Nevertheless, it would be the height of stupidity to say that esthetics knows no good and bad. It must never be forgotten that evil of any kind is none the less bad though *the occurrence of it* be a good. Because in every case the ultimate in some measure abrogates, and ought to abrogate, the penultimate, it does not follow that the penultimate ought not to have abrogated the antepenultimate in due measure. On the contrary, just the opposite follows.

Esthetic good and evil are closely akin to pleasure and pain. They are what would be pleasure or pain to the fully developed superman. What, then, are pleasure and pain? The question has been sufficiently discussed, and the answer ought by this time to be ready. They are secondary feelings or generalizations of such feelings; that is, of feelings attaching themselves to, and excited by, other feelings. A toothache is painful. It *is not* pain, but pain *accompanies* it; and if you choose to say that pain is an ingredient of it, that is not far wrong. However, the quality of the feeling of toothache is a simple, positive feeling distinct from pain; though pain accompanies it. To use the old consecrated terms, pleasure is the feeling that a feeling is "sympathetical," pain that it is "antipathetical." The feeling of pain is a symptom of a feeling which repels us; the feeling of pleasure is the symptom of an attractive feeling. Attraction and repulsion are kinds of action. Feelings are pleasurable or painful according to the kind of action which they stimulate. In general, the good is the attractive, – not to everybody, but to the sufficiently matured agent; and the evil is the repulsive to the same. Mr. Ferdinand C. S. Schiller informs us that he and James have made up their minds that the true is simply the satisfactory. No doubt; but to say "satisfactory" is not to complete any predicate whatever. Satisfactory to what end?

That truth is the correspondence of a representation with its object is, as Kant says, merely the nominal definition of it. Truth belongs exclusively to propositions. A proposition has a subject (or set of subjects) and a predicate. The subject is a sign; the predicate is a sign; and the proposition is a sign that the predicate is a sign of that of which the subject is a sign. If it be so, it is true. But what does this correspondence, or reference of the sign to its object, consist in? The pragmaticist answers this question as follows. Suppose, he says, that the angel Gabriel were to descend and communicate to me the answer to this riddle from the breast of omniscience. Is this supposable; or does it involve an essential absurdity to suppose the answer to be brought to human intelligence? In the latter case, "truth," in this sense, is a useless word, which never can express a human thought. It is real, if you will; it belongs to that universe entirely disconnected from human intelligence which we know as the world of utter nonsense. Having no use for this meaning of the word "truth," we had better use the word in another sense presently to be described. But if, on the other hand, it be conceivable that the secret

should be disclosed to human intelligence, it will be something that thought can compass. Now thought is of the nature of a sign. In that case, then, if we can find out the right method of thinking and can follow it out, – the right method of transforming signs, – then truth can be nothing more nor less than the last result to which the following out of this method would ultimately carry us. In that case, that to which the representation should conform is itself something in the nature of a representation, or sign, – something noumenal, intelligible, conceivable, and utterly unlike a thing-in-itself.

Truth is the conformity of a representamen to its object, – *its* object, ITS object, mind you. The *International Dictionary* at the writer's elbow, the *Century Dictionary* which he daily studies, the *Standard* which he would be glad sometimes to consult, all contain the word "yes"; but that word is not true simply because he is going to ask on this 8th of January, 1906, in Pike County, Pennsylvania, whether it is snowing. There must be an action of the object upon the sign to render the latter true. Without that, the object is not the representamen's object. If a colonel hands a paper to an orderly and says "You will go immediately and deliver this to Captain Hanno," and if the orderly does so, we do not say the colonel told the truth; we say the orderly was obedient, since it was not the orderly's conduct which determined the colonel to say what he did, but the colonel's speech which determined the orderly's action. Here is a view of the writer's house: what makes that house to be the object of the view? Surely not the similarity of appearance. There are ten thousand others in the country just like it. No, but the photographer set up the film in such a way that according to the laws of optics, the film was forced to receive an image of this house. What the sign virtually has to do in order to indicate its object, – and make it its, – is just to seize its interpreter's eyes and forcibly turn them upon the object meant: it is what a knock at the door does, or an alarum or other bell, a whistle, a cannon-shot, etc. It is pure physiological compulsion; nothing else.

So, then, a sign, in order to fulfill its office, to actualize its potency, must be compelled by its object. This is evidently the reason of the dichotomy of the true and the false. For it takes two to make a quarrel, and a compulsion involves as large a dose of quarrel as is requisite to make it quite impossible that there should be compulsion without resistance. So there are two parties, the compeller and the resister.

Thus, this subsection B seems pretty nearly to have accomplished its purpose, which was to outline a way of showing that it is the dualism of the normative sciences wherein is their quintessence. But no, the objector will say, you have perhaps shown that their dualism is an inevitable consequence of their normative character; but to show by any such argument that their normative character is involved in their dualism you would have to maintain that the number two always and everywhere means action and reaction, which, as a man supposed not yet to be clean daft, is a position you probably

will not take. Nor would the objector be at one moment's loss if he were asked to say explicitly just wherein the untenability of that proposition would consist. One would be a victim of something much like a hallucination if one fancied that that mere skeleton of a conception, the number two, were clothed with all the warm flesh of perhaps the most living of all philosophical ideas, the idea of right and wrong. It would be to look at two dots on a sheet of paper, and instead of seeing two little dots, to dream that the eternal battle of life was there prepared, if not actually going on. Well, the writer must evidently abandon his contention if it involves the claim that two dots on a sheet of paper is a rich picture. At the same time, it will be interesting to inquire how the conception of *two* dots is composed. For the unity of apperception requires that that which we conceive should be conceived as one. These dots are to be exactly alike; for we should evidently be adding something to the concept of duality, if we were to conceive them as distinguished by having severally in themselves different qualities each regardless of the other. But since it is thus manifest that duality consists in no quality of both or of either of the members of the pair concerned, it can only consist in a relation between them. To carry the discussion further, and to make out precisely in what that relation consists, requires a pretty thorough acquaintance with logic, since we are not only concerned with the logic of relations, which many of the ordinary treatises hardly touch, but also with the subtle doctrine of the indefinite, and at the same time with collective as opposed to distributive universality. For the relation between two individuals which *duality* implies, – the duality applying to the pair collectively, – is a relation between a single pair of individual objects. Only, this pair is *indefinite*. It is *some* pair. If *A* and *B* be taken to designate the two individuals, the relative term embodying the relation, when expressed in the writer's algebra of 1870 (substantially adopted by Schröder) is

$$A{:}B \quad \Psi \quad B{:}A.$$

This is, of course, an *equiparance*; that is, the relation of *B* to *A* is essentially the same as that of *A* to *B*, so far as the duality of the pair is concerned. But no equiparance whatever, with the exception of the very few that are necessary, such as *identity*, *coexistence*, etc., is a *logically simple relation*. In the case of those equiparances that are *opponencies*, or *juxtambilations*, that is, relations in which something can stand to something else, this is easily shown. Yet even this comparatively facile analysis requires an intellect not without an edge. For considering a non-necessary equiparance in which one individual, *A*, stands to another, *B*, this supposes a contingent determination of *A* by virtue of which it is in some simple relation to *B*. But different individual objects being independent, this may be without *B* having a similar determination putting it into every possible such relation to *A*. Thus, there

must be a possible such determination which does not necessarily imply the equiparance. Now to say that one term, say *u*, is *logically simpler* than another, say *w*, means precisely that the affirmation of *w* concerning any subject implies the affirmative truth of *u* concerning the same subject, while the affirmation of *u* does not reciprocally imply the affirmative truth of *w*; and it may be remarked, by the way, that *disquiparance* is thus necessarily involved in logical simplicity: but we need not argue from that principle. For the above considerations suffice to show that than any contingent equiparant opponency some other relation is logically simpler, and consequently no contingent equiparant opponency is perfectly simple logically; and perfectly simple is what simple means.

Duality is not simple because it involves a contingent equiparant opponency. The constituent elements of that relation will be elements of duality. The relation implied in duality is essentially and purely a dyadic relation. This proposition certainly ought not to pass unchallenged, although examination will sustain it. Are not two lines of this article truly *two*, although there is many another that there is as much reason [to consider]? Precisely that is the pertinent question; and little reflection is required to show that if anybody considers any two lines by themselves, although he may try to select them arbitrarily, there must not only be a reason, but an unmistaken reason why just those and no others are taken. It need not be recognized as such; and if the two lines are only vaguely individualized, – as *some* two, – the reason will be equally vague without thereby ceasing to exist. Nor does this proposition involve any matter of fact: it is a mere formula, that must hold in any universe. Let this proposition, – or rather, this formula, for it carries no positive truths, – be sufficiently considered, and then receive the reader's deliberate and formal assent. That given, he sees that the units of every two are the members of a set, like man and wife, teacher and pupil, the legs of a pair of dividers or of trousers, or the spring lamb and mint sauce, whose comestion and con-coction were decreed before the Fiat Lux.

Relations are truly, though not very lucidly, said to be either relations of reason or relations *in re*. The latter expression the more obtrusively fails to hit its nail squarely on the head. It would be better to say that relations are either dicible or surd. For the only kind of relation which could be veritably described to a person who had no experience of it is a relation of reason. A relation of reason is not purely dyadic: it is a relation through a sign: that is why it is dicible. Consequently the relation involved in duality is not dicible, but surd; and duality must contain as an ingredient of it a surd disquiparance.

This sort of ratiocination by which we determine little by little the characters of the relation sought might be continued almost indefinitely; but after a time, the mind can no longer restrain itself from leaping to a conclusion. It becomes too clear that the real or conceived duality of anything, say of *A* and *B*, consists in the double fact that, really in case the duality is real, conceptually

in case the duality is conceptual, the one, *A*, completes the other, *B*, and reciprocally the latter, *B*, completes the former, *A*. However, a very important modification of this statement must be made, since a conceptual duality is no true duality, inasmuch as it involves a reference to a third correlate, namely, to the conception. Therefore, in the analysis just given, all reference to conceptual relations must be struck out. True duality is a real or surd relation.

One of the most useful and at the same time one of the most arduous of the labours of cenoscopy consists in starting with a familiar but vague concept and searching out and defining the nearest definite concept of sufficient breadth for the purposes of metaphysics. Treating in this way the concept of *action*, and at the same time generalizing it so as not to confine it to temporal conditions, we get a concept which may very well be named *action* in the philosophical sense. It will be defined as a surd dyadic relation by which one correlate, the *patient*, receives a special determination, while the other correlate, the *agent*, receives *thereby*, or perhaps we should say *therein*, no special determination. The determination is *special* in the sense that in default of the relation the patient would not have been so determined. Thus, the completing of *B* by *A* is an action in the philosophical sense, in which *A* is the agent and *B* the patient. Duality consists in such action of *A* upon *B* together with a reciprocal action of the same completing nature of *B* upon *A*.

The double relation of equiparance which constitutes duality is surd. It may be described in words, but those words can only be understood by means of reference to certain experiences; just as a person may be told that a piece of textile fabric is a yard wide, yet can never know what is meant except through an experience immediate or mediate of a certain bar laid up in the Westminster palace. The experiences that acquaint us with action are of two varieties, experiences of active effort and experiences of passive surprise. By an experience of active effort is meant what is in the mind (and a less determinate phrase would be used if any were forthcoming) upon the contraction of a voluntary muscle, *minus* all idea of ulterior purpose, all sensations referred to the muscle that is contracted or to other parts of the body, and all that is otherwise plainly no part of the consciousness of effort. A person may opine that after those subtractions nothing will remain in consciousness; nor will he thereby by any means convict himself of being a bad observer. Nevertheless, such an opinion is erroneous. The sense of effort is the sense of an opposing resistance then and there present. It is entirely different from purpose, which is the idea of a possible general regarded as desirable together with a sense of being determined in one's habitual nature (in one's soul, if you like the expression; it is that part of our nature which takes general determinations of conduct) to actualize it. But the sense of effort is not an idea of anything general or of anything as possible, but of that which actually is; and it never again can be: it is the present. It is not a sensation of any kind; for that is a mere quality of feeling mixed with the sense of a present resistant,

and is passive, not active. The sense of effort is a sense that the source of activity is within one's power. The sensation from the muscle is a sense that the source of a second concomitant activity is beyond one's control. Thus, the sense of active exertion is distinguished from both the concomitants with which even an excellent observer may confound it. The question is difficult, and agreement concerning it must await mature consideration. But the writer has been convinced by various experiments that the distinct character of the sense of active exertion must eventually be acknowledged on all hands. There are certain discriminations which all men make without paying any attention to them, and which perhaps are of no peculiar type, but for which the writer, at least, would be quite at a loss to suggest any probable explanation. One of these, for example, is the discrimination between an excitation of one nerve-terminal and a similar excitation of another terminal. Another is the discrimination between pairs of facts which may possibly be connected and pairs of facts which cannot be connected; although history shows that this power of discrimination is in part a very recent acquisition of civilized man. A third unexplained power is that of discriminating between fact and fancy, between the external and the internal worlds, that which we can, and that which we cannot, control *per nutum*. Possibly this power may be due to every external experience involving more or less genuine surprise. A dream cannot *really* surprise the dreamer: he may (contrary to common belief) *dream that* he is surprised; but the surprise in this case is a dream-illusion.

There are two kinds of surprise: the less passive and the more passive. The former takes place when a person has made an effort in anticipation of experiencing a definite result, and this result does not occur. Although what does occur may be more agreeable than what he had anticipated, still he has a sense of being overcome, since his effort had been made with a view of producing that effect. The more passive surprise is when a sensation of tremendous, or at least of decidedly great, intensity is forced upon his consciousness, overcoming his negative inertia, when he had made no effort to produce such an effect. The two kinds of surprise are often united, a person not only not producing the effect he had anticipated, but being met by a phenomenon which he had not contemplated at all. Thus, a person may wake up in the morning and go to look out of the window, expecting that this action will bring the sight of green fields; but he not only does not see what he did expect but sees what he had never thought of, a covering of snow over everything. The peculiar element in both kinds of surprise is a sense of being the object of a compelling force. "*Je suis saisi*," says the hellenoidal Frenchman. The English-speaker, with his reluctance to confess weakness, only admits, "I am amazed," or "I am flabbergastered" in extraordinary circumstances. His lighter ancestor was more ready to admit himself "astonied." These expressions bespeak one's sense of being in the hands of a power against which it would be hopeless to struggle.

Both active endeavour and passive surprise involve a sense of opposition to an external force. To describe what one is thus aware of is impossible. It is not a thing to be understood. For that which is intelligible is learned gradually in successive lessons, while this is given all at once, and once for all; nor is it any quality of feeling, although there is a feeling involved in surprise, and a feeling involved in the achievement of a difficulty. For a quality of feeling has no identity but resemblance, while this is an event that happens once, and once only. Effort and surprise are the only experiences from which we can derive the concept of action. This concept does not involve duality because *agent* and *patient* are not necessarily objects of the same universe. One may be a form, the other matter. But reciprocal action, – action and reaction, – give duality, however slight the energy of the action may be. For here are two objects which belong together in the sense of being such as they are only as acting upon, and being acted upon by, each other. All inhibition of action, or action upon action, involves reaction and duality. All self-control involves, and chiefly consists in, inhibition. All direction toward an end or good supposes self-control; and thus the normative sciences are thoroughly infused with duality.

C. Philosophers have always been very loose and inaccurate thinkers; and since Fechner's immortal publication of 1860 their minds have been so turned in the direction of psychology that when they have once found how any given element of thought affects the human consciousness, they feel as if they had touched bed-rock and had got to the bottom of that element. But psychology is as special a science as physics is. It is the glory of the post-Fechnerian psychologists that they have made it so. Now to found the science of the general upon the science of the special is absurd.

Logic is no doubt a science of "thought"; but "thought," in that sense, is no more internal than it is external. Logic is the science of truth and falsity. But truth and falsity belong as much to propositions printed in books as to propositions in the human consciousness. The fact that a proposition is conscious or unconscious does not affect its truth or falsity.

But it may be said that logic is the theory of reasoning, and that reasoning can only be performed by a mind. That is certainly true, and must be true; for if anything could independently reason, it would be what we understand by a mind. But it does not follow that the phenomena that psychologists discover have any bearing upon the theory of reasoning. Compare logic with the theory of the behavior of a sailing vessel. A vessel can only sail upon a body of water, and no other liquid, and its sails must be exposed to currents of air, and no other gas. But it does not follow that the theory of sailing depends upon the chemistry of water and of air. But this comparison does not fully expose the impropriety of basing logic upon psychology, because the introduction of the study of the chemistry of air and water would have

no worse effect than that of encumbering the science with irrelevant matter. The attempt to erect a theory of logic upon the work of the psychological laboratory does far worse, since it is extremely dangerous to reason at all about psychology without constant appeals to the science of logic. For example, Christoph Sigwart and others maintain that logical truth consists, in the last analysis, in a certain *feeling*, – he emphasizes its being a quality of feeling, – of logical gratification. And to prove this he appeals to this conclusion of psychology, that in deciding whether a given consequence be logical or not we must always *trust* to that feeling. But if Sigwart and the others had made a sufficient study of exact logic, they would have seen that that principle cannot be a sound inference from observations made in their psychological laboratories. For we cannot trust a feeling as such, since a feeling as such neither is nor utters any proposition to be a subject of trust or distrust. We can only trust a feeling in so far as it is a sign of something else, namely, of a proposition. So, then, Sigwart's argument is that logical truth must consist in a feeling, because that feeling is a sign of something different from itself, namely, that truth.

But suppose he were to shift his ground and say that since this feeling always accompanies logical truth, we might as well identify it with logical truth. Then he may indeed boast that his psychological method has furnished him with an exceedingly simple theory of logic. It makes logic a pure question of feeling, of intellectual taste. *De gustibus non est disputandum.* A feeling is positively such as it is, regardless of aught else. It refers to nothing but itself. That which consists in feeling does not involve any comparison of feelings, or any synthesis of feelings. Properly speaking, because a feeling knows nothing but itself, no feeling can have, or even claim, any authority. It is true that to feeling is often joined passion, which claims autocracy over the whole world; but it is reason, thought, which alone can be the rightful head of government. The man who kindles a heap of shavings on his floor, and *feeling* that it is all right, locks his door and betakes himself to the theatre for the evening, may feel quite differently on his return. But one feeling is entitled to as much weight as another. The only system of logic which can in fact result from the principle that logical truth might as well be regarded as a quality of feeling, is, for the reasons just given, one which allows nothing but feeling to meddle at all with the decision as to what is materially true and what not; and on that principle it can only be said that the man's feeling before the theatre was logically sound for itself, and his contrary feeling on seeing the result of his conduct was equally sound logic for itself.

Logic includes a study of reasoning, it is true, and reasoning may be regarded, – not quite correctly, but we may waive that point, – as a psychical process. If we are to admit that, however, we must say that logic is not an all round study of reasoning, but only of the conditions of reasoning being bad or good, and if good to what degree, and in what application. Now good

reasoning is reasoning which attains its purpose. Its purpose is to supply a guide for conduct, – and thinking, being an active operation, is a species of conduct, – in case no percept from which a judgment could have been directly formed, is at hand. Its object is to say what the reasoner either *will* think when that percept occurs, or what he *would* think if it did occur. The psychological process of reasoning is wholly aside from the purpose of logic.

Logic, says Herbart, psychologist though he was, is a science of *concepts*; but a concept is that which is *conceived*; so that logic is a science of the result of conceiving and has nothing to do with the means whereby the conceiving is performed. In these remarks of Herbart's, *thought* and *thinking* might be substituted for *concept* and *conceiving*. A concept is a symbol present to the imagination, – that is, more correctly speaking, of which a particular instance might be present to the imagination. But the imaginary character of the instance of the symbol has no importance for logic. Its rules hold equally for the symbol embodied in real existents. For it is with the symbol in its general mode of being and not with the individual embodiment of it that logic has to do. The writer, in 1867, defined logic as the science of the formal laws of the relation of symbols to their objects. But a more mature consideration of the nature of the limits between the different branches of science has convinced him that it is better to regard logic as the entire cenoscopic study of symbols, and not only of symbols but of all kinds of signs. It will be felt as a great objection to this view that a sign is not such unless it be interpreted and that it can only be interpreted by the human mind. The reply is that just as physiology explains all the operations of the animal organism purely and exclusively by the principles of general physics, as developed by experiment upon inorganic materials, although these operations cannot be performed without an organism and an organism is something which cannot be put together by means of laboratory appliances, because it has a power of growth which cannot be conferred upon inorganic materials, and this circumstance does not invalidate the physiological explanation; so all the operations of reason can receive perfect logical explanation by principles which apply as much to real signs as to the imaginary signs called concepts, although it is quite true that we cannot make a machine that will reason as the human mind reasons until we can make a logical machine (logical machines, of course, exist) which shall not only be automatic, which is a comparatively small matter, but which shall be endowed with a genuine power of self-control; and we have as little hopes of doing that as we have of endowing a machine made of inorganic materials with life. Indeed, it shall be shown in a future article that these two attributes, *growth* and *self-control*, are confronted with closely analogous difficulties, and further that if we could endow a system of signs with self-control, there is very strong reason to believe that we should thereby have conferred upon it a *consciousness*, even more nearly like that of a man than is, for example, the consciousness of a

fish. But although the proof, or quasi-proof, of that is certainly important, its importance is so far inferior to the matters that this series of papers is designed to discuss that it must wait for its turn to be taken up; and these papers have to be written in the spare time of a hard-driven worker.

What does it mean to speak of the "interpretation" of a sign? Interpretation is merely another word for translation; and if we had the necessary machinery to do it, which we perhaps never shall have, but which is quite conceivable, an English book might be translated into French or German without the interposition of a translation into the imaginary signs of human thought. Still, supposing there were a machine or even a growing tree which, without the interpolation of any imagination were to go on translating and translating from one possible language to a new one, will it be said that the function of signs would therein be fulfilled?

What are signs for, anyhow? They are to communicate ideas, are they not? Even the imaginary signs called thoughts convey ideas from the mind of yesterday to the mind of tomorrow into which yesterday's has grown. Of course, then, these "ideas" are not themselves "thoughts," or imaginary signs. They are some potentiality, some form, which may be embodied in external or in internal signs. But why should this idea-potentiality be so poured from one vessel into another unceasingly? Is it a mere exercise of the World-spirit's *Spiel-trieb*, – mere amusement? Ideas do, no doubt, grow in this process. It is a part, perhaps we may say the chief part, of the process of the Creation of the World. If it has no ulterior aim at all, it may be likened to the performance of a symphony. The pragmaticist insists that this is not all, and offers to back his assertion by proof. He grants that the continual increase of the embodiment of the idea-potentiality is the *summum bonum*. But he undertakes to prove by the minute examination of logic that signs which should be merely parts of an endless viaduct for the transmission of idea-potentiality, without any conveyance of it into anything but symbols, namely, into action or habit of action, would not be signs at all, since they would not, little or much, fulfill the function of signs; and further, that without embodiment in something else than symbols, the principles of logic show there never could be the least growth in idea-potentiality. These two propositions remain to be proved, although a mind of vigorous and healthy intellectual impulses may have to put on the brakes to restrain himself from rushing into the embrace of the former in advance of demonstration's sanction.

§9. *What is a sign?* This is a question of no ordinary difficulty, to which the answer must be sought by a well-considered method. To begin with, let us consider what the question means; and first, What is its general nature? We are not studying lexicography. It is the same sort of question as two which have already been considered, the questions, What is *two*? and, What is *action*? We all have a ragged-outlined notion of what we call a sign. We

wish to replace that by a well-defined concept, which may exclude some things ordinarily called signs, and will almost certainly include some things not ordinarily so called. For that our new concept may have the highest utility for the science of logic, which is the purpose of the investigation, the terms of the definition must be strictly relevant to logic. As far as this condition will allow, it is to express that which is most essential in the vulgar notion of a sign or representamen. Now a sign as ordinarily understood is an implement of intercommunication; and the essence of an implement lies in its function, that is, in its purpose together with the general idea, – not, however, the plan, – of the means of attaining that purpose. The reader will perhaps have noted that the phrase "medium of communication" is broader than the noun "sign," embracing for example a sentence in the imperative mood, which would be characterized as a "signal" rather than as a "sign." Whether or no such a thing as melody, regarded, not as a *symptom* of an emotion or other feeling, but as an *excitant* of the same, would be called a "medium of communication," it certainly would lie without the *Umfang* of "sign." Now it is rather desirable that our sought concept should have a somewhat greater breadth than is strictly necessary for our purpose, on the principle that the surroundings of anything whatever aid to a comprehension of the surrounded object, and certainly in case of doubt we should prefer to include what may be needless rather than exclude anything needed. A too wide concept can do no harm whatever, provided that a careful division of it be made.

Let it be repeated that all the terms of the division must be strictly relevant to logic, and that consequently all accidents of experience, however universal, must be excluded. The result of this rule will necessarily be that the new concept of a "sign" will be defined exclusively by the forms of its logical relationships; and the utmost pains must be taken to understand those relations in a purely formal, or, as we may say, in a purely mathematical way.

At this point, some such question as the following may suggest itself: Is this new scientific concept of a Sign not to recognize the connection of every sign with two minds? The proper reply would first point out that two separate minds are not requisite for the operation of a sign. Thus the premisses of an argument are a sign of the truth of the conclusion; yet it is essential to argument that the same mind that thinks the conclusion *as such* should also think the premisses. Indeed, two minds in communication are, in so far, "at one," that is, are properly one mind in that part of them. That being understood, the answer to the question will go on to recognize that every sign, – or, at any rate, nearly every one, – is a determination of something of the general nature of a mind, which we may call the "quasi-mind." But the further consideration of the nature of this must be put off to the next section.

The writer knows no more handy phrase to describe the kind of analysis we are attempting than "logical analysis." It is a designation just tolerably apt. It is not accurate. For in this work we should wind ourselves up in

apparent antinomies if we allowed dual distinctions to be as absolute as they are in the normative sciences. We are now in the realm of phaneroscopy, the first of the three main divisions of cenoscopy. It is not yet time to define it; but it approaches somewhat to the nature of mathematics. In mathematics, the negative of quantity is *zero*; but instead of being set over against quantity as its eternal foe, it is regarded as merely the limit of quantity, and in a sense as itself a special grade of quantity. This is no violation of the principle of contradiction: it is merely regarding the negative from another point of view. There are some languages in which two negatives make an affirmative. Those are the logical languages. The people who speak them ought, for consistency, to be hard, moral natures. In other languages, probably the majority, a double negative remains a negative, just as $0 \times 0 = 0$, none of none is none. These are quantitative languages. We should expect the people who speak them to be more humane and more highly philosophical. The fact is mentioned here merely to show that the quantitative view of negation, though it is not the view of the hard moralist, nor of the hard logician, does not really involve any bad reasoning. Did it ever occur to the gentle reader that in ordinary algebra we seldom write that one quantity is *unequal* to another: we simply write what else it equals? The general phenomenon throughout mathematics is that almost every strongly marked concept has border concepts which lose the strong characteristics but are included in a broader concept. Thus a conic curve, considered as a curve of the second order, includes as a case of it two intersecting rays, with which a hyperbola may indefinitely approach coincidence, and this figure again includes, and may indefinitely approximate to, one double ray with a nodal point upon it. But a conic can equally well be conceived as a curve of the second class, and as such, it will not include the two intersecting rays, but will include a pair of points with the ray joining them, considered as a double tangent; and the tangents of a very narrow ellipse or hyperbola will indefinitely approach that as their envelope; and this figure again will indefinitely approach a double point with a ray through it; so that one line with one point upon it can be conceived either as a curve of the second order or as a curve of the second class. These colorless borders (if the expression be allowed) of highly colored concepts are, in mathematics, well called "degenerate forms." Not that the two rays in a plane present any particular degeneracy; but when the pair is offered as a case of a conic, it is manifest that all the beautiful relations that characterize genuine conics have, in this form, quite petered out. The same phenomenon presents itself in the realm of phaneroscopy to such an extent that the only successful way of analyzing any of the concepts which belong peculiarly to this realm is, not to begin by considering that concept in all its breadth, but rather to confine oneself, at first, to its highly characterized form, and when that has been thoroughly comprehended, to inquire by what modifications the bordering forms attach themselves to it.

But this rule must not be understood as conflicting with the plan of examining the highest and most general concepts first. However, until special instances are before us, abstract descriptions can hardly be understood.

A sign is plainly a species of medium of communication, and medium of communication is a species of medium, and a medium is a species of third. A genuine third is something which differs from a first in one respect and from a second in another respect. If this other respect is a contrary respect, the third is a medium. Hence in Latin, where "medium" is a vernacular word, the distinction between it and "tertium" is slight. Thus the *principium exclusi medii* is indifferently, though more correctly, called *principium exclusi tertii.*

A triadic relation is most appropriately expressed in a proposition whose subject Nominative denotes the most active correlate, which we may call *N*, which acts upon a more or less similar correlate, *A*, denoted by the direct object or Accusative of the sentence, and at the same time upon something, *D*, of a different kind, denoted by the indirect object, which will be most appropriately put in the Dative. There will, of course, be three dyadic relations, between *N* and *A*, *N* and *D*, and *A* and *D*; but a genuine triadic relation does not consist in any or all of these. It may here be remarked that Combination is a triadic relation between the two elements (for every Combination results from successive couplings) and the result, and is in so far genuine that it cannot be analyzed into any Combination of dyadic relations. But Combination is not a thoroughly genuine triadic relation, since the different elements, the Combinants, are (as far as the mere relation of combination goes) in precisely the same relation to the result, the Combinate.

A medium of communication is something, *A*, which being acted upon by something else, *N*, in its turn acts upon something, *I*, in a manner involving its determination by *N*, so that *I* shall thereby, through *A* and only through *A*, be acted upon by *N*. We may purposely select a somewhat imperfect example. Namely, one animal, say a mosquito, is acted upon by the entity of a zymotic disease, and in its turn acts upon another animal, to which it communicates the fever. The reason that this example is not perfect is that the active medium is in some measure of the nature of a *vehicle*, which differs from a medium of communication, in acting upon the transported object and determining it to a changed location, where, without further interposition of the vehicle, it acts upon, or is acted upon by, the object to which it is conveyed. A sign, on the other hand, just in so far as it fulfills the function of a sign, and none other, perfectly conforms to the definition of a medium of communication. It is determined by the object, but in no other respect than goes to enable it to act upon the interpreting quasi-mind; and the more perfectly it fulfills its function as a sign, the less effect it has upon that quasi-mind other than that of determining it as if the object itself had acted upon

it. Thus, after an ordinary conversation, a wonderfully perfect kind of sign-functioning, one knows what information or suggestion has been conveyed, but will be utterly unable to say in what words it was conveyed, and often will think it was conveyed in words, when in fact it was only conveyed in tones or in facial expressions.

It seems best to regard a sign as a determination of a quasi-mind; for if we regard it as an outward object, and as addressing itself to a human mind, that mind must first apprehend it as an object in itself, and only after that consider it in its significance; and the like must happen if the sign addresses itself to any quasi-mind. It must begin by forming a determination of that quasi-mind, and nothing will be lost by regarding that determination as the sign. So, then, it is a determination that really acts upon that of which it is a determination, although *genuine* action is of one thing on another. This perplexes us, and an example of an analogous phenomenon will do good service here. Metaphysics has been said contemptuously to be a fabric of metaphors. But not only metaphysics, but logical and phaneroscopical concepts need to be clothed in such garments. For a pure idea without metaphor or other significant clothing is an onion without a peel.

Let a community of quasi-minds consist of the liquid in a number of bottles which are in intricate connexion by tubes filled with the liquid. This liquid is of complex and somewhat unstable mixed chemical composition. It also has so strong a cohesion and consequent surface-tension that the contents of each bottle take on a self-determined form. Accident may cause one or another kind of decomposition to start at a point of one bottle producing a molecule of peculiar form, and this action may spread through a tube to another bottle. This new molecule will be a determination of the contents of the first bottle which will thus act upon the contents of the second bottle by continuity. The new molecule produced by decomposition may then act chemically upon the original contents or upon some molecule produced by some other kind of decomposition, and thus we shall have a determination of the contents that actively operates upon that of which it is a determination, including another determination of the same subject.

But it is high time we insured ourselves against snares by determining the precise sense which we are to attach to the term *determination*, and to set in order the terminology of its mental vicinity. A few pages were given to this work in last October's *Monist* (Vol. XV, pp. 487–490); but those remarks require supplementation. Determination, in general, was not defined at all; and the attempt at defining the determination of a subject with respect to a character only covered (or seemed only to cover) explicit propositional determination. An incidental remark (p. 488) to the effect that words whose meaning should be determinate would leave "no latitude of interpretation" was more satisfactory, since the context made it plain that there must be no such latitude either for the interpreter or for the utterer. The explicitness of

the words would leave the utterer no room for explanations of his meaning. This definition has the advantage of being applicable to a command, to a purpose, to a medieval substantial form; in short to anything capable of indeterminacy.[2] Even a future event can only be determinate in so far as it is a consequent. Now the concept of a consequent is a logical concept. It is derived from the concept of the conclusion of an argument. But an argument is a sign of the truth of its conclusion; its conclusion is the rational *interpretation* of the sign. This is in the spirit of the Kantian doctrine that metaphysical concepts are logical concepts applied somewhat differently from their logical application. The difference, however, is not really as great as Kant represents it to be, and as he was obliged to represent it to be, owing to his mistaking the logical and metaphysical correspondents in almost every case.

Another advantage of this definition is that it saves us from the blunder of thinking that a sign is indeterminate simply because there is much to which it makes no reference; that, for example, to say, "C. S. Peirce wrote this article," is indeterminate because it does not say what the color of the ink used was, who made the ink, how old the father of the ink-maker was when his son was born, nor what the aspect of the planets was when that father was born. By making the definition turn upon the interpretation, all that is cut off. At the same time, it is tolerably evident that the definition, as it stands, is not sufficiently explicit, and further, that at the present stage of our inquiry it cannot be made altogether satisfactory. For what is the interpretation alluded to? To answer that convincingly would be either to establish or to refute the doctrine of pragmaticism. Still some explanations may be made. Every sign has a single object, though this single object may be a single set or a single continuum of objects. No general description can identify an object. But the common sense of the interpreter of the sign will assure him that the object must be one of a limited collection of objects. Suppose, for example, two Englishmen to meet in a continental railway carriage. The total number of subjects of which there is any appreciable probability that one will speak to the other perhaps does not exceed a million; and each will have perhaps half that million not far below the surface of consciousness, so that each unit of it is ready to suggest itself. If one mentions Charles the Second, the other need

[2] That everything indeterminate is of the nature of a sign can be proved inductively by imagining and analyzing instances of the surdest description. Thus, the indetermination of an event which should happen by pure chance without cause, *sua sponte*, as the Romans mythologically said, *spontanément* in French (as if what was done of one's own motion were sure to be irrational), does not belong to the event, – say, an explosion, – *per se*, or as explosion. Neither is it by virtue of any real relation: it is by virtue of a relation of reason. Now what is true by virtue of a relation of reason is representative, that is, is of the nature of a sign. A similar consideration applies to the indiscriminate shots and blows of a Kentucky free fight.

not consider what possible Charles the Second is meant. It is no doubt the English Charles Second. Charles the Second of England was quite a different man on different days; and it might be said that without further specification the subject is not identified. But the two Englishmen have no purpose of splitting hairs in their talk; and the latitude of interpretation which constitutes the indeterminacy of a sign must be understood as a latitude which might affect the achievement of a purpose. For two signs whose meanings are for all possible purposes equivalent are absolutely equivalent. This, to be sure, is rank pragmaticism; for a purpose is an affection of action.

What has been said of subjects is as true of predicates. Suppose the chat of our pair of Englishmen had fallen upon the color of Charles II's hair. Now that colors are seen quite differently by different retinas is known. That the chromatic sense is much more varied than it is positively known to be is quite likely. It is very unlikely that either of the travellers is trained to observe colors or is a master of their nomenclature. But if one says that Charles II had dark auburn hair, the other will understand him quite precisely enough for all their possible purposes; and it will be a determinate predication.

The October remarks made the proper distinction between the two kinds of indeterminacy, viz: indefiniteness and generality, of which the former consists in the sign's not sufficiently expressing itself to allow of an indubitable determinate interpretation, while the latter turns over to the interpreter the right to complete the determination as he pleases. It seems a strange thing, when one comes to ponder over it, that a sign should leave its interpreter to supply a part of its meaning; but the explanation of the phenomenon lies in the fact that the entire universe, – not merely the universe of existents, but all that wider universe, embracing the universe of existents as a part, the universe which we are all accustomed to refer to as "the truth," – that all this universe is perfused with signs, if it is not composed exclusively of signs. Let us note this in passing as having a bearing upon the question of pragmaticism.

The October remarks, with a view to brevity, omitted to mention that both indefiniteness and generality might primarily affect either the logical breadth or the logical depth of the sign to which they belong. It now becomes pertinent to notice this. When we speak of the depth, or signification, of a sign, we are resorting to hypostatic abstraction, that process whereby we regard a thought as a thing, make an interpretant sign the object of a sign. It has been a butt of ridicule since Molière's dying week, and the depth of a writer on philosophy can conveniently be sounded by his disposition to make fun of the basis of voluntary inhibition, which is the chief characteristic of mankind. For cautious thinkers will not be in haste to deride a kind of thinking that is evidently founded upon observation, – namely, upon observation of a sign. At any rate, whenever we speak of a predicate we are representing a thought as a thing, as a *substantia*, since the concepts of *substance* and *subject* are one, its concomitants only being different in the two cases. It is needful to remark this

in the present connection, because, were it not for hypostatic abstraction, there could be no generality of a predicate, since a sign which should make its interpreter its deputy to determine its signification at his pleasure would not signify anything, unless *nothing* be its significate. But hypostatic abstraction (the product of which may be termed a *hypostasis*) renders general classes of predicates possible, and classes of those classes, and so on, in a manner which the dull and lazy brood of modern logicians has failed to investigate sufficiently, not to say altogether. Oh, it maddens one to think how ignorant, – and in many respects, doubtless, far worse than ignorant, – their criminal neglect has left us. Only think what legions of good-for-nothing bummers have written logic-books without bestirring themselves to repay their debt to the Greeks and to the medieval doctors by adding a single sentence of new truth to the science! It is not the fashion now even for our Platos to believe in a day of judgment; but remember, Reader, that if a logical talent has been given to you, you cannot maturely reflect upon your situation without coming to intend to deal with posterity as you would that your predecessors had dealt with you.[3]

As an example, we may suppose that one of our two travellers informs the other that Charles II's hair was dark auburn. This would undoubtedly refer, not to the color, in the scientific sense, but to the color-*sensation*, and to this sensation as it becomes modified by unconscious quasi-judgments, that is, judgments unrecognized as modifying the immediate feeling; but it will be convenient to call this "color," as the Englishman himself, presuming him not to be a scientific man, would doubtless have done. The predicate "light auburn" would be sufficiently determinate. But had he said the hair was "colored," that would have been vague to the point of idiocy. Color has its hue, its chroma, or height of color, and its luminosity. A concept of color of any one hue, of any one chroma, or of any one luminosity is a concept of color somewhat indeterminate. As the predicate of a proposition concerning a colored object, it would be somewhat *vague*; in the predicate of an imperative sentence, as "paint this in a dark color," it would be *general*, since it leaves the interpreter free to give the other two coefficients of the color any determination that may suit him. As for hue, chroma, and luminosity, themselves, which we term *respects*, they are merely terms of second intention, somewhat like the biological words *variety*, *species*, *genus*, *family*, *order*, *class*, and *branch*. That is, any one of them describes the nature of the indeterminacy of a predicate. The biological words, in their only universally recognized significations, indicate the *relative quantity* of the indeterminacy of terms of first intention like pouter, dove, passerine, bird, vertebrate, etc., while the chromatic words express the *quality* of the indeterminacy of terms of first

[3] If the writer has fulfilled this duty, it has been no more an act of virtue than is the usual obedience to the common command in the 28th verse of Genesis.

intention such as green, high color, tinted. Both series are of proper predicates of predicates. They agree also in that each has its tolerably close analogues through a wide range of predicates. A hierarchical series, more or less like the biological, is a necessary result of any eventful evolution of class-characters. Louis Agassiz argued with great force that the biological hierarchy expresses, or should express, the various stages of the execution of a purpose; but whoever has read *The World and the Individual* will understand (despite the not unimportant logical slips of that work) that purpose is the very fatherland of evolution. When, on the other hand, classification has a mathematical origin, as seems to be the case with that of the chemical elements, for example, cross-classifications are common, if not usual. Throughout a class of cases which could be logically defined, were there space for the discussion, but of which it will be sufficient to say that it embraces the qualities of each of our well-marked senses, there is a triad of respects analogous to luminosity, hue, and chroma. It will be remarked that in the *habitat* of a respect, or the general subject in which it is found, we have a logical concept of a different kind from any of those mentioned before.[4] We may formulate these chromatic respects by saying that the luminosity is the quantity, the more-or-less-ness, – meaning that whether the measurement be hyperbolic, parabolic, or elliptical is beside the meaning, – of the quality; that the hue is the *suchness* of the quality; and that the chroma is the *such-degree* of the quality. But these phrases are the merest ghosts, without explanation. In particular, the reader may well be at a loss to know what distinction can be made between quality and "suchness."

We are treading here the very littoral of our knowledge of logic. Every step has to be taken with caution for there are quicksands all about. Yet it is just the ground where many writers love to prance, overconfident and rash. If they did not speedily quit the subject, they would soon find how they had entrapped themselves, and would be drowned in the rising tide of the great ocean of doubt and ignorance. No satisfactory account has ever been given of the logical nature of a hypostasis. Take, as an example, a very precise abstract term; say, *hardness*. One may hesitate to say whether the single object denoted by this term, that is, the quality of hardness, is a capacity or a habit; the *possibility* that its subject should sustain the moderate pressure of a knife-edge drawn over it without being scratched, or the *impossibility* of its being scratched by the moderate pressure of the knife-edge. For having no experience of substances whose rasibility is as uncertain as the throw of a die, we can appeal to no instance to show whether we should call such an object

[4] Only so much as seems pertinent to the business in hand is here given of a subject, one of a number equally extensive which have been worked out by the author; and the publication of his work, no matter what blunders he may have committed, must be of ultimate utility to human thought. But it will soon be too late to think of publication.

hard or not. But one illuminating phenomenon we can note; namely, that *hard* is one of a whole category of predicates which appear to be invariably true under circumstances capable of being generally described, and are invariably false when that general condition is not fulfilled. The opinion that this phrase "appear to be" ought to read "are," and that it is not a category of predicates but all predicates whatever of which this holds good, is held by very many logicians, and especially by nominalists, who are, oddly enough, most unwarrantably addicted to universal assertions, for all their maintaining that universality is a mere figment or, at best, a mere subjective appearance.

Nobody, however, has ever found any law, reason, or rhyme according to which such and such points of the heavens are occupied with stars, or for any other fact of existence. Existence can be traced back to a metamorphosis, but the existence did not begin with the metamorphosis; and there is no single instance in which any law has ever been found to regulate with precision the when and where of existence. That the chemical elements of the atmosphere should have low atomic weights and that elements of high atomic weights should be rare in the earth's crust is roughly true, as a mere consequence of the association of specific weight with atomic weight; but to suppose that there is any exact law as to arrangements of existents is a well-recognized mark of a mind not sanely loyal to truth of fact. Men's minds are confused by a looseness of language and of thought which leads them to talk of the causes of single events. They ought to consider that it is not the single actuality, in its identity, which is the subject of a law, but an ingredient of it, an indeterminate predicate. Consequently, the question is, not whether each and every event is precisely caused, in one respect or another, but whether every predicate of that event is caused. For instance, a man bets upon the toss of a coin. He wins his bet. Now the question is whether there was any circumstance about the toss of that coin which necessitated this character of it; namely, its accordance with his bet. There are those who believe that such predicates are precisely determinate; but rational proof fails them. The majority of men call such things uncaused; and this opinion is powerfully supported by the utter failure of every attempt to base predictions of such occurrences upon any specified law. The class of predicates is one of which every man on earth for several thousand years has had multiplied hourly experience; and since in no case has there been any promising appearance of approach to a law, we are more than justified in saying that precise dependence upon general conditions appears to be limited to a category of predicates, without undertaking to say what category that is.

PRAGMATISM

Charles S. Peirce. "Pragmatism." MS 318, Spring 1907.

Composed in early spring 1907, Peirce had hoped to publish this text either in *The Nation* or in the *Atlantic Monthly*. The third version of one of his most ambitious essays on pragmatism, this text is extracted from MS 318 in Richard S. Robin's *Annotated Catalogue of the Papers of Charles S. Peirce* and preserved in the Houghton Library, Harvard University.

Mr. Editor:

The philosophical journals, the world over, are just now brimming over, as you know, with pragmatism and antipragmatism. The number of *Leonardo* that reaches me this morning has an admirable piece on the subject by a writer of genius and of literary skill, Giovanni Papini. Yesterday brought news of discussions along the same line in New Zealand. Often, however, one hears glib utterances that betray complete misunderstanding of this new ingredient of the thought of our time; so that I gladly accept your invitation to explain what pragmatism really is, how it came into being, and whither it is tending.

Any philosophical doctrine that should be completely new could hardly fail to prove completely false; but the rivulets at the head of the river of pragmatism are easily traced back to almost any desired antiquity. Socrates bathed in these waters. Aristotle rejoices when he can find them. They run, where least one would suspect them, beneath the dry rubbish-heaps of Spinoza. Those clean definitions that strew the pages of the *Essay concerning Humane Understanding* (I refuse to reform the spelling) had been washed out in these same pure springs. It was this medium, and not tar-water, that gave health and strength to Berkeley's earlier works, his *Theory of Vision* and what remains of his *Principles*. From it the general views of Kant derive such clearness as they have. Auguste Comte made still more, – much more, – use of this element; as much as he saw his way to using. Unfortunately, however, both he and Kant, in their rather opposite ways, were in the habit of mingling these sparkling waters with a certain mental sedative to which many men are addicted, – and the burly businessmen very likely to their benefit, – but

which plays sad havoc with the philosophical constitution. I refer to the habit of cherishing contempt for the close study of logic.

So much for the past. The ancestry of pragmatism is respectable enough; but the more conscious adoption of it as *lanterna pedibus* in the discussion of dark questions, and the elaboration of it into a method in aid of philosophic inquiry came, in the first instance, from the humblest *souche* imaginable. It was in the earliest seventies that a knot of us young men in Old Cambridge, calling ourselves, half-ironically, half-defiantly, 'The Metaphysical Club', – for agnosticism was then riding its high horse, and was frowning superbly upon all metaphysics, – used to meet, sometimes in my study, sometimes in that of William James. It may be that some of our old-time confederates would today not care to have such wild-oats-sowings made public, though there was nothing but boiled oats, milk, and sugar in the mess. Mr. Justice Holmes, however, will not, I believe, take it ill that we are proud to remember his membership; nor will Joseph Warner Esq. Nicholas St. John Green was one the most interested fellows, a skillful lawyer and a learned one, a disciple of Jeremy Bentham. His extraordinary power of disrobing warm and breathing truth of the draperies of long worn formulas was what attracted attention to him everywhere. In particular, he often urged the importance of applying Bain's definition of belief, as "that upon which a man is prepared to act." From this definition, pragmatism is scarce more then a corollary; so that I am disposed to think of him as the grandfather of pragmatism. Chauncey Wright, something of a philosophical celebrity in those days, was never absent from our meetings. I was about to call him our corypheus; but he will better be described as our boxing-master whom we, – I, particularly, – used to face to be severely pummelled. He had abandoned a former attachment to Hamiltonianism to take up with the doctrines of Mill, to which and to its cognate agnosticism he was trying to weld the really incongruous ideas of Darwin. John Fiske and, more rarely, Francis Ellingwood Abbot, were sometimes present, lending their countenances to the spirit of our endeavours, while holding aloof from any assent to their success. Wright, James, and I were men of science, rather scrutinizing the doctrines of the metaphysicians on their scientific side than regarding them as very momentous spiritually. The type of our thought was decidedly British. I, alone of our number, had come upon the threshing-floor of philosophy through the doorway of Kant, and even my ideas were acquiring the English accent.

Our metaphysical proceedings had all been in winged words (and swift ones, at that, for the most part) until at length, lest the club should be dissolved without leaving any material *souvenir* behind, I drew up a little paper expressing some of the opinions that I had been urging all along under the name of pragmatism. This paper was received with such unlooked for kindness, that I was encouraged, some half-dozen years later, on the invitation of the great publisher, Mr. W. H. Appleton, to insert it, somewhat expanded,

in the *Popular Science Monthly* for November 1877 and January 1878, not with the warmest possible approval of the Spencerian editor, Dr. Edward Youmans. The same paper appeared the next year in a French redaction in the *Revue Philosophique* (Vol. VI, p. 553; Vol. VII, p. 39). In those medieval times, I dared not in type use an English word to express an idea unrelated to its received meaning. The authority of Mr. Principal Campbell weighed too heavily upon my conscience. I had not yet come to perceive, what is so plain today, that if philosophy is ever to stand in the ranks of the sciences, literary elegance must be sacrificed, – like the soldier's old brilliant uniforms, – to the stern requirements of efficiency, and the philosophist must be encouraged, – yea, and required, – to coin new terms to express such new scientific concepts as he may discover, just as his chemical and biological brethren are expected to do. Indeed, in those days, such brotherhood was scorned, alike on the one side and on the other; – a lamentable but not surprising state of scientific feeling. As late as 1893, when I might have procured the insertion of the word pragmatism in the *Century Dictionary*, it did not seem to me that its vogue was sufficient to warrant that step.

It is now high time to explain what pragmatism is. I must, however, preface the explanation by a statement of what it is not, since many writers, especially of the starry host of Kant's progeny, in spite of pragmatists' declarations, unanimous, reiterated, and most explicit, still remain unable to 'catch on' to what we are driving at, and persist in twisting our purpose and purport all awry. I was long enough, myself, within the Kantian fold to comprehend their difficulty; but let it go. Suffice it to say once more that pragmatism is, in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and of abstract concepts. All pragmatists of whatsoever stripe will cordially assent to that statement. As to the ulterior and indirect effects of practising the pragmatistic method, that is quite another affair.

All pragmatists will further agree that their method of ascertaining the meanings of words and concepts is no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today; – this experimental method being itself nothing but a particular application of an older logical rule, "By their fruits ye shall know them."

Beyond these two propositions to which pragmatists assent *nem. con.*, we find such slight discrepancies between the views of one and another declared adherents as are to be found in every healthy and vigorous school of thought in every department of inquiry. The most prominent of all our school and the most respected, William James, defines pragmatism as the doctrine that the whole "meaning" of a concept expresses itself either in the shape of conduct to be recommended or of experience to be expected. Between this definition

and mine there is certainly a slight theoretical divergence, which, for the most part, becomes evanescent in practice; and though we may differ on important questions of philosophy, – especially as regards the infinite and the absolute, – I am inclined to think that the discrepancies reside in other than the pragmatistic ingredients of our thought. If pragmatism had never been heard of, I believe the opinions of James on one side, of me on the other would have developed substantially as they have; notwithstanding our respective ways of connecting them at present with our conception of that method. The brilliant and marvellously human thinker, Mr. F. C. S. Schiller, who extends to the philosophic world a cup of nectar stimulant in his beautiful *Humanism*, seems to occupy ground of his own, intermediate, as to this question, between those of James and mine.

I understand pragmatism to be a method of ascertaining the meanings, not of all ideas, but only of what I call "intellectual concepts," that is to say, of those upon the structure of which arguments concerning objective fact may hinge. Had the light which, as things are, excites in us the sensation of blue, always excited the sensation of red, and *vice versa*, however great a difference that might have made in our feelings, it could have made none in the force of any argument. In this respect, the qualities of hard and soft strikingly contrast with those of red and blue; because while red and blue name mere subjective feelings only, hard and soft express the factual behavior of the thing under the pressure of a knife-edge. [I use the word "hard" in its strict mineralogical sense, "would resist a knife-edge."] My pragmatism, having nothing to do with qualities of feeling, permits me to hold that the predication of such a quality is just what it seems, and has nothing to do with anything else. Hence, could two qualities of feeling everywhere be interchanged, nothing but feelings could be affected. Those qualities have no intrinsic significations beyond themselves. Intellectual concepts, however, – the only sign-burdens that are properly denominated "concepts," – essentially carry some implication concerning the general behaviour either of some conscious being or of some inanimate object, and so convey more, not merely than any feeling, but more, too, than any existential fact, namely, the "*would-acts*" of habitual behaviour; and no agglomeration of actual happenings can ever completely fill up the meaning of a "would be." But that the *total* meaning of the predication of an intellectual concept consists in affirming that, under all conceivable circumstances of a given kind, the subject of the predication would (or would not) behave in a certain way, – that is, that it either would, or would not, be true that under given experiential circumstances (or under a given proportion of them, taken *as they would occur* in experience) certain facts would exist, – *that* proposition I take to be the kernel of pragmatism. More simply stated, the whole meaning of an intellectual predicate is that certain kinds of events would happen, once in so often, in the course of experience, under certain kinds of existential circumstances.

But how is this pregnant principle to be proved true? For it seems to be in violent contrast to what one will read, let us say, for example, in Mr. Bradley's *Appearance and Reality*, and in the other works of the high metaphysicians; as it no less decidedly conflicts with the simpler doctrines of Haeckel, Karl Pearson, and other nominalists. I might offer half a dozen different demonstrations of the pragmatist principle; but the very simplest of them would be technical and lengthy. It would not be such as a reader of this journal, a student of current literature, could be expected to undertake critically to examine. Such a reader would like to know the color of the thought that supports the positive assertion of pragmatism, without entering too minutely into details. Just such desire I shall endeavour to satisfy, though the smallest sufficient measure of detail will scare away some readers who if they were to persevere would find the detail interesting.

To begin with, every concept and every thought beyond immediate perception is a sign. So much was well made out by Leibniz, Berkeley, and others about two centuries ago. The use of the word λόγος shows that the Greeks, before the development of the science of grammar, were hardly able to think of thought from any other point of view. Let anybody who may desire evidence of the truth of what I am saying just recall the course of what passed in his mind during some recent sincere and fervid self-deliberation. If he is a good introspector, he will remark that his deliberations took a dialogic form, the arguer of any moment appealing to the reasonableness of the *ego* of the succeeding moment for his critical assent. Now, it is needless to say that conversation is composed of signs. Accordingly, we find the sort of mind that is least sophisticated and is surest to betray itself by its language is given to such expressions as "I says to myself, says I," or even to audibly talking to himself, like Launcelot Gobbo, according to the subtle psychologist who created him. Oh, I am confident the reader will grant that every thought is a sign.

Now how would you define a *sign*, Reader? I do not ask how the word is ordinarily used. I want such a definition as a zoologist would give of a fish, or a chemist of a fatty body, or of an aromatic body, – an analysis of the essential nature of a sign, if the word is to be used as applicable to everything which the most general science of semeio´tic must regard as its business to study; be it of the nature of a significant quality, or something that once uttered is gone forever, or an enduring pattern, like our sole definite article; whether it professes to stand for a possibility, for a single thing or event, or for a type of things or of truths; whether it is connected with the thing, be it truth or fiction, that it represents, by imitating it, or by being an effect of its object, or by a convention or habit; whether it appeals merely to feeling, like a tone of voice, or to action, or to thought; whether it makes its appeal by sympathy, by emphasis, or by familiarity; whether it is a single word, or a sentence, or is Gibbon's *Decline and Fall*; whether it is interrogatory, imper-

ative, or assertory; whether it is of the nature of a jest, or is sealed and attested, or relies upon artistic force; and I do not stop here because the varieties of signs are by any means exhausted. Such is the definitum which I seek to fit with a rational, comprehensive, scientific, structural definition, – such as one might give of "loom," "marriage," "musical cadence"; aiming, however, let me repeat, less at what the definitum conventionally does mean, than at what it were best, in reason, that it should mean.

Everybody recognizes that it is no inconsiderable art, this business of "phaneroscopic" analysis by which one frames a scientific definition. As I practice it, in those cases, like the present, in which I am debarred from a direct appeal to the principle of pragmatism, I begin by seizing upon that predicate which appears to be most characteristic of the definitum, even if it does not quite apply to the entire extension of the definitum. If the predicate be too narrow, I afterward seek for some ingredient of it which shall be broad enough for an amended definitum and, at the same time, be still more scientifically characteristic of it.

Proceeding in that way with our definitum, "sign," we note, as highly characteristic, that signs mostly function each between two minds, or theatres of consciousness, of which the one is the agent that *utters* the sign (whether acoustically, optically, or otherwise), while the other is the *patient* mind that *interprets* the sign. Going on with my account of what is characteristic of a sign, without taking the least account of exceptional cases, for the present, I remark that, before the sign was uttered, it already was virtually present to the consciousness of the utterer, in the form of a thought. But, as already remarked, a thought is itself a sign, and should itself have an utterer (namely, the ego of a previous moment), to whose consciousness it must have been already virtually present, and so back. Likewise, after a sign has been interpreted, it will virtually remain in the consciousness of its interpreter, where it will be a sign, – perhaps, a resolution to apply the burden of the communicated sign, – and, as a sign should, in its turn have an interpreter, and so on forward. Now it is undeniably conceivable that a beginningless series of successive utterers should all do their work in a brief interval of time, and that so should an endless series of interpreters. Still, it is not likely to be denied that, in some cases, neither the series of utterers nor that of interpreters forms an infinite collection. When this is the case, there must be a sign without an utterer and a sign without an interpreter. Indeed, there are two pretty conclusive arguments on these points that are likely to occur to the reader. But why argue, when signs without utterers are often employed? I mean such signs as symptoms of disease, signs of the weather, groups of experiences serving as premisses, etc. Signs without interpreters less manifestly, but perhaps not less certainly exist. Let the cards for a Jacquard loom be prepared and inserted, so that the loom shall weave a picture. Are not those cards signs? They convey intelligence, – intelligence that, considering its spirit and pictorial

effect, cannot otherwise be conveyed. Yet the woven pictures may take fire and be consumed before anybody sees them. A set of those models that the designers of vessels drag through the water may have been prepared; and with the set a complete series of experiments may have been made; and their conditions and results may have been automatically recorded. There, then, is a perfect representation of the behaviour of a certain range of forms. Yet if nobody takes the trouble to study the record, there will be no interpreter. So the books of a bank may furnish a complete account of the state of the bank. It remains only to draw up a balance sheet. But if this be not done, while the sign is complete, the human interpreter is wanting.

Having found, then, that neither an utterer, nor even, perhaps, an interpreter is essential to a sign, characteristic of signs as they both are, I am led to inquire whether there be not some ingredient of the utterer and some ingredient of the interpreter which not only are so essential, but are even more characteristic of signs than the utterer and the interpreter themselves. We begin with seeking the essential ingredient of the utterer. By calling this quaesitum an *ingredient* of the utterer, I mean that where this quaesitum is absent the utterer cannot be present; and further that where there is no utterer, it cannot be that this quaesitum together with all the others of a certain body of "ingredients" should all be present. This latter clause, however, has so little importance and is so nearly self-evident that I need not insist upon it. A fact concerning our quaesitum, which we can know in advance of all study, is that, because this quaesitum will function as a sort of substitute for an utterer, in case there be no utterer, or at any rate fulfills nearly the same, but a more essential, function, it follows that since it is not the sign that constructs or voices or represents the utterer, but, on the contrary, the utterer that constructs, voices, and sets forth the sign, therefore, although *ex hypothesi* the quaesitum is something quite indispensible to the functioning of the sign, yet it cannot be fully revealed or brought to light by any study of the sign alone, as such. Knowledge of it must come from some previous or collateral source. Moreover, since it is conceived to act upon the sign, it must be conceived as singular, not general. But perhaps this is not very clear and needs illustration.

Example 1. Suppose I chance to overhear one man at a club say to another "Ralph Pepperill has bought that mare Pee Dee Kew." Never having heard before either of Ralph Pepperill or of Pee Dee Kew, it means to me only that some man has bought some famous trotter; and since I knew already that some men do make such purchases, it does not interest me. But the next day I hear somebody inquire where he can find a copy of Stevens's edition of Plato; to which reply is made that Ralph Pepperill says he has a copy. Now although I never was knowingly acquainted with any purchaser of crack trotting-horses, yet I should not have supposed that such a person would be aware of possessing an old edition of Plato whose chief value is due to the circum-

stance that modern citations from the Dialogues usually refer to it. After this, I begin to pay attention to what I hear of Ralph Pepperill; until, at length, that which the name means to me probably represents pretty fairly what it would mean to an acquaintance of the man. This imparts, not merely an interest, but also a *meaning* to every little scrap of new information about him; – to scraps that would have conveyed no information whatsoever, had they first introduced his name to my ears. Yet the name itself will remain a designation devoid of essential signification, and so much of the accidental kind as it may at any time have acquired will not have been derived, in however slight measure, from the utterer of any sentence which it may furnish with informatory interest; – at least, not from him in his capacity as utterer of that sentence.

Example 2. I remember a blazing July noon in the early sixties when a fellow-student in the chemical laboratory, in whose company I was crossing the Harvard 'College Yard', while the grass shone like emeralds, and the red-brick buildings, not red enough by nature for the taste of the curator, were blazing in a fresh coat of something like vermillion, – when this fellow student casually remarked upon the pleasing harmony of color between the grass, the foliage, and the buildings. With eyes feeling as if their balls were being twisted by some inquisitor, I at first understood the remark as a sorry joke, like the gibes of some Indian captive at the want of skill of his tormentors. But I soon found that it was the utterance of a sincere feeling, and then, by a series of questions, soon discovered that my friend was blind to the red element of color. A man may have learned that he is color-blind; but it is impossible that he should be conscious of the stupendous gulf between his chromatic impressions and those of ordinary men; although it is needful to take account of this in all interpretations of what he may say about colors. In the course of my examination of that young gentleman, which occupied several days, I learned a more general lesson, worth multiples of the time it lost me from the laboratory.

Example 3. Toward the end of a sultry afternoon, three young gentlemen are still lounging together; one in a long chair, one supine upon a lounge, the third standing by the open casement that looks down seven stories upon the Piazza di Spagna from its Pincian side, and seems to be half glancing at the newspaper that has just been brought to him. His is one of those natures that habitually hold themselves within the limits of extreme calm, because they too well know the terrible expense of allowing themselves to be stirred. In a few moments, he breaks the silence with the words, "Verily, it is a terrible fire." What does he mean? The other twain are too lazy to ask. The long-chaired one thinks the utterer was looking at the newspaper when he made his exclamation, and concludes that there has been a conflagration in Teheran, in Sydney, or in some such place, appalling enough to be flashed round the globe. But the couched man thinks the utterer was looking out of the window, and

that there must be a fire down in the Corso, or in that direction. Here is another case in which the whole burden of the sign must be ascertained, not by closer examination of the utterance, but by collateral observation of the utterer.

Example 4. I find (let us suppose) among my books, a quarto volume among the leaves of which an old MS letter has got bound which gives some details about a fire, – apparently a considerable conflagration, since the writer speaks of it as "the fire," as if the addressee could not possibly misidentify it, and since different houses being consumed are mentioned as small details. If it refers to the great fire of London, it is certainly of remarkable interest. But how am I to know whether it does so or not? I need not say that the binder in trimming the edges has cut off the date; since the oath of their trade, as it would seem, must oblige binders to do this whenever the margins carry matter of special interest. I can, therefore, only submit the MS to some experts in diplomatics who can pronounce on the date of the writing and of the paper. In this case, again, the whole significance of the sign depends upon collateral observation.

Example 5. Pronouns are words whose whole object is to indicate what kind of collateral observation must be made in order to determine the significance of some other part of the sentence. "Which" directs us to seek the quaesitum in the previous context; the personal pronouns to observe who is the speaker, who the hearer, etc. The demonstrative pronouns usually direct this sort of observation to the circumstances of the utterance (perhaps to the way a finger points) rather than to the words.

Example 6. Since the most acute minds, in dealing with conceptions unfamiliar to them, will blunder in ways that astonish those who are habituated to such dealings, I will propose, as an additional example, that of a weather-cock. Now a weather-cock is one of those natural signs, like a sign of the weather, which depend upon a physical connection between the sign and that of which it is the sign. But a weather-cock having been devised, as everyone knows, to show which way the wind blows, itself signifies to what it refers; and consequently it may be argued that no collateral observation is called for to complete its significance. But this reasoning commits two faults. In the first place, it confuses two incompatible ways of conceiving of a weather-cock: as a natural sign, and therefore as having no utterer; and as a human contrivance to show the direction of the wind, and as such, uttered by its original inventor [for I speak of the Weather-cock, – the type, not the single instance]. In the second place, the reasoning overlooks the obvious truth that when thoughts are determined or revealed by a sign, the sign exists first (virtually, at any rate), and those thoughts subsequently. Hence, thoughts applied to devise a weather-cock cannot be revealed by the weather-cock, but come under the head of "previous or collateral" information. To this all-sufficient reply, it may be added, by way of surplusage, that prudent persons, in

consulting a weather-cock, watch it to see whether it veers, as a security against the possibility of its being jammed by rust or otherwise, and against its being deflected by any other force than that of the wind.

It is now easy to see that the "*requaesitum*" which we have been seeking is simply that which the sign "stands for," or the idea of that which it is calculated to awaken. We now have a clearer idea of the *requaesitum* than we had, at first, of the "object of the sign." Our remarks may be regarded as attempts to analyze the idea of "standing for" or "representing." The *requaesitum*, when there are both an utterer and an interpreter, is that which the former has in mind, but which it does not occur to him to express, because he well knows that the interpreter will understand that he refers to that, without his saying so. I am speaking of cases in which the sign stands alone without any context. Thus if the utterer says "Fine day!" he does not dream of any possibility of the interpreter's thinking of any mere *desire* for a fine day that a Finn of the North Cape might have entertained on April 19, 1776. He means, of course, to refer to the actual weather, then and there, where he and the interpreter are alike influenced by the fine weather, and have it near the surface of their common consciousness. Marine fossils found on a mountain, considered as a sign of the sea-level having been higher than the levels of deposit of those fossils, refers to a distant but indefinite date. Here, there is no utterer; but this is what might have remained unexpressed in the mind of the utterer, though essential to the significance of the sign, if that sign had been devised and constructed to give the human race a first lesson in geology. Where the sign is only a part of another sign, so that there is a context, it is in that context that the *requaesitum* is likely, in part at least, to be found; though it is not absolutely necessary that it should be found in any part of the sign.

This *requaesitum* I term the *Object* of the sign; – the *immediate* object, if it be the idea which the sign is built upon, the *real* object, if it be that real thing or circumstance upon which that idea is founded, as on bed-rock.

The Object of a Sign, then, is necessarily unexpressed in the sign, taken by itself. Indeed, we shall soon see that whatever is so expressed comes under quite a different category. But the above examples show that that idea which though essential to the functioning of a sign can only be attained by collateral observation is the idea of a strictly individual thing, or individual collection or series, or an individual event, or an individual *ens rationis*. This sufficiently proves the truth of the proposition. There are deeper causative reasons that cannot be given here. The proposition does not amount to so much as it has the air of doing, since whatever actually exists is an individual. For a finite plural is nothing but the singular of an indefinite collective noun; while the endlessness of an infinite collection is of a hypothetical, or ideal, nature, and lacks completed existence. The object of a sign, though singular, may nevertheless be multiple, and may even be infinitely so. Take a verb in the indicative

mood out from its context, and what is its object? What, for example, is the object of "runs"? *Answer:* it is something, a runner. What is the object of "kills"? *Answer:* it is a pair of indesignate individuals, the one a killer, the other killed by him. So "gives" has for its object a triplet of related indesignate singulars, a giver, a gift, a recipient of that gift from that giver. "Buys" is predicated of a quartette composed of the seller, the buyer, the legal right that is transferred from the former to the latter, and the price. The different members of the set which is the object of a verb, – its *partial* objects, as they may be called, – often have distinctive characters which are the same for large numbers of verbs. Thus, the partial objects of an ordinary transitive verb are an agent and a patient. These distinctive characters have nothing to do with the form of verb, as a sign, but are derived from the form of the fact signified. By taking note of this, one may avoid some perplexity when the verb itself expresses the functioning of a sign. For example, one of the partial objects of the verb "expresses" is of course the thing expressed, which in some drowsy moment might seem an instance refuting the principle that the object of a sign cannot be expressed by the sign itself. To avoid the puzzle, one need but note that the verb "expresses" not only *is* a sign, and expresses something, but also signifies the action of a sign, or expresses its expressing something. Its accusative is the object of the outer sign, but not of the other, inner, sign which this outer sign implies.

It should be mentioned that though a sign cannot express its Object, it may describe, or otherwise indicate, the kind of collateral observation by which that Object is to be found. Thus, a proposition whose subject is distributively universal (not plural or otherwise collectively universal), such as "Any man will die," allows the interpreter, after collateral observation has disclosed what single universe is meant, to take any individual of that universe as the Object of the proposition, giving, in the above example, the equivalent "If you take any individual you please of the universe of existent things, and if that individual is a man, it will die." If the proposition had been, "Some Old Testament character was translated," the indication would have been that the individual must be suitably selected, while the interpreter would have been left to his own devices to identify the individual.

Now that we have attained, you and I, Reader, as I hope, a pretty clear notion of what, in strictness of speech, must be meant by the Object of a sign, it becomes pertinent to inquire how far such strictness of speech is practicable and convenient. Of the two loosely synonymous terms, "individual" and "singular," the former translates Aristotle's *τὸ ἄτομον* (see 3a35, about the middle of the 5th chapter of the Categories), the latter his *τὸ καθ' ἕκαστον* (see the 27th chapter of the 1st Prior Analytics, where Cleon and Callias are given as examples). "Individual" is usually and well defined as that which is absolutely determinate; the "singular" is that which is absolutely determinate as long as the time is so, or to generalize this definition, is variable only in two

precisely opposite and converse ways of varying. Now it is quite impossible that any collateral observations, however they might be eked out by imagination or thought, should ever approach a *positive* idea of a singular, let alone an individual; that is, that we should actually think it as determinate in each one of the more than millions of respects in which things may vary. Suppose, for example, that it is visible; and consider only the outline of a single aspect of it. Even though this outline were restricted to being one of a family of curves, say ellipses, the different possible shapes between any two limiting shapes are more than innumerable; for there is a continuum of them. It would be impossible to complete our collateral observation, aided though it were by imagination and thought, even in this one, almost insignificant, respect. It is plainly impracticable, therefore, to restrict the meaning of the term "object of a sign" to the Object strictly so called.

For, after all, collateral observation, aided by imagination and thought, will usually result in some idea, though this need not be particularly determinate; but may be indefinite in some regards and general in others. Such an apprehension, approaching, however distantly, that of the Object strictly so called, ought to be, and usually is, termed the "immediate object" of the sign in the intention of its utterer. It may be that there is no such thing or fact in existence, or in any other mode of reality; but we surely shall not deny to the common picture of a phenix or to a figure of naked truth in her well the name of a "sign," simply because the bird is a fiction and Truth an *ens rationis*.

If there be anything *real* (that is, anything whose characters are true of it independently of whether you or I, or any man, or any number of men think them as being characters of it, or not) that sufficiently corresponds with the immediate object (which, since it is an apprehension, is not real), then whether this be identifiable with the Object strictly so-called or not, it ought to be called, and usually is called, the "real object" of the sign. By some kind of causation or influence it must have determined the significant character of the sign.

So much for the object, or that by which the sign is essentially determined in its significant characters in the mind of its utterer. Corresponding to it there is something which the sign in its significant function essentially determines in its interpreter. I term it the "interpretant" of the sign. In all cases, it includes feelings; for there must, at least, be a sense of comprehending the meaning of the sign. If it includes more than mere feeling, it must evoke some kind of effort. It may include something besides, which, for the present, may be vaguely called "thought." I term these three kinds of interpretant the "emotional," the "energetic," and the "logical" interpretants.

If a sign has no interpreter, its interpretant is a "would be," i.e., is what it *would* determine in the interpreter if there were one. In its general nature, the interpretant is much more readily intelligible than the object, since it includes all that the sign of itself expresses or signifies. But there is some difficulty in

defining the three kinds of interpretant. It may possibly be, for example, that I am taking too narrow a conception of the sign in general in saying that its initial effect must be of the nature of feeling, since it may be that there are agencies that ought to be classed along with signs and yet that at first begin to act quite unconsciously. But since this error, if it be one, does not seem to have anything to do with the subject of pragmatism, I do not now stop to consider it. A much more serious question, especially in the present connection, concerns the nature of that logical interpretant, the conveyed thought, which we easily assure ourselves that some signs have, though we do not straightway discern in what it consists.

I am now prepared to risk an attempt at defining a sign, – since in scientific inquiry, as in other enterprises, the maxim holds, *Nothing hazard, nothing gain.* I will say that a sign is anything, of whatsoever mode of being, which mediates between an object and an interpretant; since it is both determined by the object *relatively to the interpretant*, and determines the interpretant *in reference to the object*, in such wise as to cause the interpretant to be determined by the object through the mediation of this "sign."

The object and the interpretant are thus merely the two correlates of the sign; the one being antecedent, the other consequent of the sign. Moreover, the sign being defined in terms of these correlative correlates, it is confidently to be expected that object and interpretant should precisely correspond, each to the other. In point of fact, we do find that the immediate object and emotional interpretant correspond, both being apprehensions, or are "subjective"; both, too, appertain to all signs without exception. The real object and energetic interpretant also correspond, both being real facts or things. But to our surprise, we find that the logical interpretant does not correspond with any kind of object. This defect of correspondence between object and interpretant must be rooted in the essential difference there is between the nature of an object and that of an interpretant; which difference is that the former antecedes, while the latter succeeds the sign. The logical interpretant must, therefore, be in a relatively future tense.

To this may be added the consideration that it is not all signs that have logical interpretants, but only intellectual concepts and the like; and these are all either general or intimately connected with generals, as it seems to me. This shows that the species of future tense of the logical interpretant is that of the conditional mood, the "*would-be.*"

At the time I was originally puzzling over the enigma of the nature of the logical interpretant, and had reached about the stage where the discussion now is, being in a quandary, it occurred to me that if I only could find a moderate number of concepts which should be at once highly abstract and abstruse, and yet the whole nature of whose meanings should be quite unquestionable, a study of them would go far toward showing me how and why the logical interpretant should in all cases be a conditional future. I had

no sooner framed a definite wish for such concepts, than I perceived that in mathematics they are as plenty as blackberries. I at once began running through the explications of them, which I found all took the following form: Proceed according to such and such a general rule. Then, if such and such a concept is applicable to such and such an object, the operation will have such and such a general result; and conversely. Thus, to take an extremely simple case, if two geometrical figures of dimensionality N should be equal in all their parts, an easy rule of construction would determine, in a space of dimensionality N containing both figures, an axis of rotation, such that a rigid body that should fill not only that space but also a space of dimensionality $N + 1$ containing the former space, turning about that axis, and carrying one of the figures along with it, while the other figure remained at rest, the rotation would bring the movable figure back into its original space of dimensionality N, and when that event occurred, the movable figure would be in exact coincidence with the unmoved one, in all its parts; while if the two figures were not so equal, this would never happen.

Here was certainly a stride toward the solution of the enigma. For the treatment of a score of intellectual concepts on that model, only a few of them being mathematical, seemed to me to be so refulgently successful as fully to convince me that to predicate any such concept of a real or imaginary object is equivalent to declaring that a certain operation, corresponding to the concept, if performed upon that object, would (certainly, or probably, or possibly, according to the mode of predication) be followed by a result of a definite general description.

Yet this does not quite tell us just what the nature is of the essential effect upon the interpreter, brought about by the *semio´sis* of the sign, which constitutes the logical interpretant. [It is important to understand what I mean by *semiosis*. All dynamical action, or action of brute force, physical or psychical, either takes place between two subjects (whether they react equally upon each other, or one is agent and the other patient, entirely or partially) or at any rate is a resultant of such actions between pairs. But by "semiosis" I mean, on the contrary, an action, or influence, which is, or involves, a cooperation of *three* subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs. *Σημείωσις* in Greek of the Roman period, as early as Cicero's time, if I remember rightly, meant the action of almost any kind of sign; and my definition confers on anything that so acts the title of a "sign."]

Although the definition does not require the logical interpretant (or, for that matter, either of the other two interpretants) to be a modification of consciousness, yet our lack of experience of any semiosis in which this is not the case, leaves us no alternative to beginning our inquiry into its general nature with a provisional assumption that the interpretant is, at least, in all cases, a sufficiently close analogue of a modification of consciousness to

keep our conclusion pretty near to the general truth. We can only hope that, once that conclusion is reached, it may be susceptible of such a generalization as will eliminate any possible error due to the falsity of that assumption. The reader may well wonder why I do not simply confine my inquiry to psychical semiosis, since no other seems to be of much importance. My reason is that the too frequent practice, by those logicians who do not go to work without any method at all, of basing propositions in the science of logic upon results of the science of psychology, – as contradistinguished from common-sense observations concerning the workings of the mind, observations well known even if little noticed, to all grown men and women that are of sound minds, – that practice is to my apprehension as unsound and insecure as was that bridge in the novel of *Kenilworth* that, being utterly without any sort of support, sent the poor Countess Amy to her destruction; seeing that, for the firm establishment of the truths of the science of psychology, almost incessant appeals to the results of the science of logic, – as contradistinguished from natural perceptions that one relation evidently involves another, – are peculiarly indispensible. Those logicians continually confound *psychical* truths with *psychological* truths, although the distinction between them is of that kind that takes precedence over all others as calling for the respect of anyone who would tread the strait and narrow road that leadeth unto exact truth.

Making that provisional assumption, then, I ask myself, since we have already seen that the logical interpretant is general in its possibilities of reference (i.e., refers or is related to whatever there may be of a certain description), what categories of mental facts there be that are of general reference. I can find only these four: conceptions, desires (including hopes, fears, etc.), expectations, and habits. I trust I have made no important omission. Now it is no explanation of the nature of the logical interpretant (which, we already know, is a concept) to say that it is a concept. This objection applies also to desire and expectation, as explanations of the same interpretant; since neither of these is general otherwise than through connection with a concept. Besides, as to desire, it would be easy to show (were it worth the space) that the logical interpretant is an effect of the energetic interpretant, in the sense in which the latter is an effect of the emotional interpretant. Desire, however, is cause, not effect, of effort. As to expectation, it is excluded by the fact that it is not conditional. For that which might be mistaken for a conditional expectation is nothing but a judgment that, under certain conditions, there would be an expectation: there is no conditionality in the expectation itself, such as there is in the logical interpretant after it is actually produced. Therefore, there remains only habit, as the essence of the logical interpretant.

Let us see, then, just how, according to the rule derived from mathematical concepts (and confirmed by others), this habit is produced; and what sort of

a habit it is. In order that this deduction may be rightly made, the following remark will be needed. It is not a result of scientific psychology, but is simply a bit of the catholic and undeniable common sense of mankind, with no other modification than a slight accentuation of certain features.

Every sane person lives in a double world, the outer and the inner world, the world of percepts and the world of fancies. What chiefly keeps these from being mixed up together is (besides certain marks they bear) everybody's well knowing that fancies can be greatly modified by a certain non-muscular effort, while it is muscular effort alone (whether this be 'voluntary', that is, preintended, or whether all the intended endeavour is to inhibit muscular action, as when one blushes, or when peristaltic action is set up on experience of danger to one's person) that can, to any noticeable degree, modify percepts. A man can be durably affected by his percepts and by his fancies. The way in which they affect him will be apt to depend upon his personal inborn disposition and upon his habits. Habits differ from dispositions in having been acquired as consequences of the principle, virtually well-known even to those whose powers of reflexion are insufficient to its formulation, that multiply reiterated behavior of the same kind, under similar combinations of percepts and fancies, produces a tendency, – the *habit*, – actually to behave in a similar way under similar circumstances in the future. Moreover, – *here is the point*, – every man exercises more or less control over himself by means of modifying his own habits; and the way in which he goes to work to bring this effect about in those cases in which circumstances will not permit him to practice reiterations of the desired kind of conduct in the outer world shows that he is virtually well-acquainted with the important principle that *reiterations in the inner world*, – *fancied reiterations*, – *if well-intensified by direct effort*, *produce habits*, just as do reiterations in the outer world; *and these habits will have power to influence actual behaviour in the outer world*; especially, if each reiteration be accompanied by a peculiar strong effort that is usually likened to issuing a command to one's future self.[1]

[I here owe my patient reader a confession. It is that when I said that those signs that have a logical interpretant are either general or closely connected with generals, this was not a scientific result, but only a strong impression due to a lifelong study of the nature of signs. My excuse for not answering the

[1] I well remember when I was a boy, and my brother Herbert, now our minister at Christiania, was scarce more than a child, one day, as the whole family were at table, some spirit from a "blazer," or "chafing-dish," dropped on the muslin dress of one of the ladies and was kindled; and how instantaneously he jumped up, and did the right thing, and how skillfully each motion was adapted to the purpose. I asked him afterward about it, and he told me that since Mrs. Longfellow's death he had often run over in imagination all the details of what ought to be done in such an emergency. It was a striking example of a real habit produced by exercises in the imagination.

question scientifically is that I am, as far as I know, a pioneer, or rather a backwoodsman, in the work of clearing and opening up what I call *semiotic*, that is, the doctrine of the essential nature and fundamental varieties of possible semiosis; and I find the field too vast, the labor too great, for a first-comer. I am, accordingly, obliged to confine myself to the most important questions. The questions of the same particular type as the one I answer on the basis of an impression, which are of about the same importance, exceed four hundred in number; and they are all delicate and difficult, each requiring much search and much caution. At the same time, they are very far from being among the most important of the questions of semiotic. Even if my answer is not exactly correct, it can lead to no great misconception as to the nature of the logical interpretant. There is my apology, such as it may be deemed.]

It is not to be supposed that upon every presentation of a sign capable of producing a logical interpretant, such interpretant is actually produced. The occasion may either be too early or too late. If it is too early, the semiosis will not be carried so far, the other interpretants sufficing for the rude functions for which the sign is used. On the other hand, the occasion will come too late if the interpreter be already familiar with the logical interpretant, since then it will be recalled to his mind by a process which affords no hint of how it was originally produced. Moreover, the great majority of instances in which formations of logical interpretants do take place are very unsuitable to serve as illustrations of the process, because in them the essentials of this semiosis are buried in masses of accidental and hardly relevant semioses that are mixed with the former. The best way that I have been able to hit upon for simplifying the illustrative example which is to serve as our matter upon which to experiment and observe is to suppose a man already skillful in handling a given sign (that has a logical interpretant) to begin now before our inner gaze for the first time seriously to inquire what that interpretant is. It will be necessary to amplify this hypothesis by a specification of what his *interest* in the question is supposed to be. In doing this, I by no means follow Mr. Schiller's brilliant and seductive humanistic logic, according to which it is proper to take account of the whole personal situation in logical inquiries. For I hold it to be very evil and harmful procedure to introduce into scientific investigation an unfounded hypothesis, without any definite prospect of its hastening our discovery of the truth. Now such a hypothesis Mr. Schiller's rule seems to me, with my present lights, to be. He has given a number of reasons for it; but, to my estimate, they seem to be of that quality that is well calculated to give rise to interesting discussions, and is consequently to be recommended to those who intend to pursue the study of philosophy as an entertaining exercise of the intellect, but is negligible for one whose earnest purpose is to do what in him lies toward bringing about a metamorphosis of philosophy into a genuine science. I cannot turn aside into Mr. Schiller's charming lane. When I ask what the interest is in seeking to discover a logical

interpretant, it is not my fondness for strolling in paths where I can study the varieties of humanity that moves me, but the definite reflexion that unless our hypothesis be rendered specific as to that interest, it will be impossible to trace out its logical consequences, since the way the interpreter will conduct the inquiry will greatly depend upon the nature of his interest in it.

I shall suppose, then, that the interpreter is not particularly interested in the theory of logic, which he may judge by examples to be profitless; but I shall suppose that he has embarked a great part of the treasures of his life in the enterprise of perfecting a certain invention; and that, for this end, it seems to him extremely desirable that he should acquire a demonstrative knowledge of the solution of a certain problem of reasoning. As to this problem itself, I shall suppose that it does not fall within any class for which any general method of handling is known, and that indeed it is indefinite in every respect which might afford any familiar kind of handle by which any image fairly representing it could be held firmly before the mind and examined; so that, in short, it seems to elude reason's application or to slip from its grasp.

Various problems answering this description might be instanced; but to fix our ideas, I will specify one of them, and will suppose that this is the very one which our imaginary inventor wishes to solve. It shall be the following "map-coloring problem": Let a globular body be bored through in two wide holes; and, though it is unnecessary, the edge at each end of each tunnel shall be smoothly rounded off. Then the problem is, supposing its utterer is free to divide the whole surface of this body, – including the surfaces of the bores, – into regions in any way he likes (no region consisting of separated pieces), and supposing that it will then fall to the interpreter to color the whole area of each region in one color, but never giving to two regions that abut along a common boundary-line the same color; required to ascertain what will be the least number of different colors that will always suffice, no matter how the surface may have been divided.

Under the high stimulus of his interest in this problem, and with that practical knack that we have supposed him to possess in coloring maps without too frequently being obliged to go back and alter the colors he had assigned to given regions, we need not doubt that our inquirer will be thrown into a state of high activity in the world of fancies, in experimenting upon coloring maps, while trying to make out what subconscious rule guides him, and renders him as successful as he usually is; and in trying, too, to discover what rule he had violated in each case where his first coloration has to be changed. This activity is, logically, an energetic interpretant of the interrogatory he puts to himself. Should he in this way succeed in working out a determinate rule for coloring every map on the two-tunnelled (or, what is the same thing, the two-bridged) everywhere unbounded surface with the fewest possible colors, there will be good hope that a demonstration may tread upon the heels of that rule, in which case, the problem will be solved in the most

convenient form. But while he may very likely manage to formulate his own usually successful way of coloring the regions, it is very unlikely that he will obtain an unfailing rule for doing so. For after some of the first mathematicians in Europe had found themselves baffled by the far simpler problem, to prove that every map upon an ordinary sheet can be colored with four colors, one of the very first logico-mathematicians of our age, Mr. Alfred B. Kempe, proposed a proof of it, somewhat, though not exactly, of the kind we are supposing our imaginary inventor to be aiming at. Yet I am informed that many years later a fatal flaw was discovered in Mr. Kempe's proof. I do not remember that I ever knew what the fallacy was. We may assume with confidence, then, that our imaginary interpreter will, at length, come to despair of solving the problem in that way. What way shall I imagine him to try next?

It will be very natural for him to pass from endeavouring to define a uniformly successful rule of procedure, to endeavouring either, first, to define the topical conditions under which two different regions must be colored alike, if the colors are not to exceed a given number; whence he will deduce the conditions under which two regions that do not abut must be colored differently; or else, first to define the conditions under which two regions cannot, by being stretched out, be brought into abuttal along a boundary, and thence to define the conditions under which two regions must be colored alike. Either of these methods is more promising than the one with which he began; and yet were either capable of being perfected without some very peculiar *aperçu*, the easier task of demonstrating that four colors suffice for every map on an ordinary limited sheet or globular surface must long ago have been brought to completion, which never has been accomplished, I believe, in print. We may assume, then, that he will, at length, come to abandon every such method. Meantime, he cannot fail to have noticed several obvious propositions that will be useful in his further inquiries. One of these will be that by minute alterations of the boundaries between regions, which alterations can neither diminish nor increase the number of colors that will in all cases just suffice, he can get rid of all points where four or more regions concur, and thus render the number of points of concurrence two-thirds as many as the number of boundaries, so that the latter number will be divisible by three, and the former by two, unless fewer colors are required than are generally necessary. He will also have remarked that there must for each color be at least one region of that color which abuts upon regions of all the other colors, that for each of these other colors there must be at least one region that besides abutting upon the first region abuts upon regions of all the remaining colors, etc.

I shall suppose that it now occurs to him that it not only makes no difference what the proportionate dimensions either of the whole surface or of any of the regions are, but that it is equally indifferent whether any part of the whole surface be flat, convex, concave, curved, or broken by angles, or whether any

boundaries are straight, curved, or broken by angles, and are convex or concave to either of the regions it bounds; whence it will follow that the problem belongs neither to Metrical, nor to Graphical (or Projective) Geometry, but to Topical Geometry, or Geometrical Topics. This is the most fundamental, and no doubt, in its own nature, much the easiest of the three departments of geometry. For just as metrics, as Cayley showed, is but a special problem in the easier graphics; so quite obviously graphics is a special problem in the easier topics. For there is no other possible way of defining unlimited planes and rays, than by the topical statement (which does not fully define them) that the unbounded planes are a family of surfaces in 3-dimensional space of which any two contain one common line only, which is a *ray*, and of which any three that do not all contain one common ray have one point and only one in common; and further, any two points are both contained in one and in only one ray, while any three points not all in one ray are contained in one and only one unbounded plane.[2]

But though Topics must be the easiest kind of geometry, yet geometers were so accustomed to rely on considerations of measure and of flatness, that when they were deprived of these, they did not know how to handle problems; so that, apart from mere enumerations of forms, such as knots, we are still in possession of only one general theorem of Topics, Listing's census-theorem. Consequently, our imagined investigator, as soon as he remarks that he has a problem in topical geometry before him, will infer that he must utilize that sole known theorem of topics; albeit it is sufficiently obvious that that theorem of itself is not adequate to furnishing a solution of his problem. I will state the census-theorem of Listing with some sacrifice of exactitude to perspicuity, in so far as it applies to the map-coloring problem. The surface which is divided into regions may be bounded by a line or unbounded. If it be unbounded and separates a solid into two parts, I call it *artiad*; if it does not, I call it *perissid*. The *Cyclosy*, or ringiness, of the surface of a body unpierced by any tunnel (i.e., not bridged over by an unbounded bridge) is *zero*; and every tunnel through the body adds *two* to the cyclosy of its surface. The cyclosy of the simplest perissid surface, such as an unbounded plane, is *one*, and every tunnel connecting two parts of it in an additional way (or every cylindrical bridge, which will be a tunnel on the other side of the surface) adds *two* to the cyclosy. A region, or an uninterrupted boundary that

[2] This supposes the unbounded 3-dimensional space to have a peculiar shape. For if it had the simplest shape possible (or what seems to me such, and what Listing assumed to be the real shape of space), every unbounded surface in it would separate it into two parts, and the unbounded line common to two surfaces would cut any third unbounded surface in an even number of points, since this line would pass alternately from one to the other of the two parts into which the first surface had cut the unbounded solid space. The peculiar shape of the solid space is that of "projective space."

does not return into itself (as I will assume is the case with all regions and boundaries between two regions), has *zero* cyclosy. I will further assume that there is more than one region on the surface. Under these circumstances, the census-theorem takes this form, supposing all points of concurrence of regions are points where three regions and no more run together: One third of the number of boundaries from one point of concurrence to the next diminished by the number of regions is equal to one less than the cyclosy of the whole surface, if this be bounded, or to two less than the cyclosy, if the surface be unbounded. In the case of the surface of a body pierced by two tunnels, the surface is unbounded, and its cyclosy is 4. The investigator will see at once that the number of colors must be at least 7, and is likely to be more. For were the body pierced by but one tunnel, let the number of regions each abutting upon all the rest be x. Then, the number of boundaries would be $1/2x\ (x-1)$; and the census-theorem applied to this case would be $1/6x\ (x-1) - x = 2 - 2$. That is, $x^2 - 7x = 0$, or $x = 7$. Since, then, even with but one tunnel seven colors might be required, at least that number will be required for the case of two tunnels. On the other hand, were 2 tunnels made in a projective plane, where the cyclosy would be 5, instead of 4, only 9 regions could touch one another; so that it is likely that for a surface of cyclosy 4, the requisite number of colors is less than 9. The investigator will, therefore, only have to ascertain whether 8, and if so whether 9, colors can be required. He is still not very near his solution, but he is not hopelessly removed from it.

In every case, after some preliminaries, the activity takes the form of experimentation in the inner world; and the conclusion (if it comes to a definite conclusion) is that under given conditions, the interpreter will have formed the habit of acting in a given way, whenever he may desire a given kind of result. The real and living logical conclusion *is* that habit; the verbal formulation merely expresses it.

I do not deny that a concept, proposition, or argument may be a logical interpretant. I only insist that it cannot be the final logical interpretant, for the reason that it is itself a sign of that very kind that has itself a logical interpretant. The habit alone, though it may be a sign in some other way, is not a sign in that way in which the sign of which it is the logical interpretant is a sign. The habit conjoined with the motive and the conditions has the action for its energetic interpretant; but action cannot be a logical interpretant, because it lacks generality. The concept which is a logical interpretant is only imperfectly so. It somewhat partakes of the nature of a verbal definition, and is as inferior to the habit, and much in the same way, as a verbal definition is inferior to the real definition. The deliberately formed, self-analyzing habit, – self-analyzing because formed by the aid of analysis of the exercises that nourished it, – is the living definition, the veritable and final logical interpretant. Consequently, the most perfect account of a concept that words can convey will consist in a description of the habit which that concept is calcu-

lated to produce. But how otherwise can a habit be described than by a description of the kind of action to which it gives rise, with the specification of the conditions and of the motive?

If we now revert to the psychological assumption originally made, we shall see that it is already largely eliminated by the consideration that habit is by no means exclusively a mental fact. Empirically, we find that some plants take habits. The stream of water that wears a bed for itself is forming a habit. Every ditcher so thinks of it. Turning to the rational side of the question, the excellent current definition of habit, due, I suppose, to some physiologist (if I can remember my bye-reading for nearly half a century unglanced at, Brown-Sequard much insisted on it in his book on the spinal cord), says not one word about the mind. Why should it, when habits in themselves are entirely unconscious, though feelings may be symptoms of them, and when consciousness alone, – i.e., feeling, – is the only distinctive attribute of mind?

What further is needed to clear the sign of its mental associations is furnished by generalizations too facile to arrest attention here, since nothing but feeling is exclusively mental. But while I say this, it must not be inferred that I regard consciousness as a mere "epiphenomenon"; though I heartily grant that the hypothesis that it is so has done good service to science. To my apprehension, consciousness may be defined as that congeries of non-relative predicates, varying greatly in quality and in intensity, which are symptomatic of the interaction of the outer world, – the world of those causes that are exceedingly compulsive upon the modes of consciousness, with general disturbance sometimes amounting to shock, and are acted upon only slightly, and only by a special kind of effort, muscular effort, – and of the inner world, apparently derived from the outer, and amenable to direct effort of various kinds with feeble reactions, the interaction of these two worlds chiefly consisting of a direct action of the outer world upon the inner and an indirect action of the inner world upon the outer through the operation of habits. If this be a correct account of consciousness, i.e., of the congeries of feelings, it seems to me that it exercises a real function in self-control, since without it, or at least without that of which it is symptomatic, the resolves and exercises of the inner world could not affect the real determinations and habits of the outer world. I say that these belong to the outer world because they are not mere fantasies but are real agencies.

I have now outlined my own form of pragmatism; but there are other slightly different ways of regarding what is practically the same method of attaining vitally distinct conceptions, from which I should protest from the depths of my soul against being separated. In the first place, there is the pragmatism of James, whose definition differs from mine only in that he does not restrict the "meaning," that is, the ultimate logical interpretant, as I do, to a habit, but allows percepts, that is, complex feelings endowed with compulsiveness, to be such. If he is willing to do this, I do not quite see how he need give any room

at all to habit. But practically, his view and mine must, I think, coincide, except where he allows considerations not at all pragmatic to have weight. Then there is Schiller, who offers no less than seven alternative definitions of pragmatism. The first is that pragmatism is the doctrine that "truths are logical values." At first blush, this seems far too broad; for who, be he pragmatist or absolutist, can fail to prefer truth to fiction? But no doubt what is meant is that the objectivity of truth really consists in the fact that, in the end, every sincere inquirer will be led to embrace it; – and if he be not sincere, the irresistible effect of inquiry in the light of experience will be to make him so. This doctrine appears to me, after one subtraction, to be a corollary of pragmatism. I set it in a strong light in my original presentation of the method. I call my form of it "conditional idealism." That is to say, I hold that truth's independence of individual opinions is due (so far as there is any "truth") to its being the predestined result to which sufficient inquiry *would* ultimately lead. I only object that, as Mr. Schiller himself seems sometimes to say, there is not the smallest scintilla of logical justification for any assertion that a given sort of result will, as a matter of fact, either *always* or *never* come to pass; and consequently we cannot know that there *is* any truth concerning any given question; and this, I believe, agrees with the opinion of Monsieur Henri Poincaré, except that he seems to insist upon the nonexistence of any absolute truth for *all* questions, which is simply to fall into the very same error on the opposite side. But practically, we know that questions do generally get settled in time, when they come to be scientifically investigated; and that is practically and pragmatically enough. Mr. Schiller's second definition is Captain Bunsby's that "the 'truth' of an assertion depends on its application," which seems to me the result of a weak analysis. His third definition is that pragmatism is the doctrine that "the meaning of a rule lies in its application," which would make the "meaning" consist in the energetic interpretant and would ignore the logical interpretant; another feeble analysis. His fourth definition is that pragmatism is the doctrine that "all meaning depends on purpose." I think there is much to be said in favor of this, which would, however, make pragmatists of many thinkers who do not consider themselves as belonging to our school of thought. Their affiliations with us are, however, undeniable. His fifth definition is that pragmatism is the doctrine that "all mental life is purposive." His sixth definition is that pragmatism is "a systematic protest against all ignoring of the purposiveness of actual knowing." Mr. Schiller seems habitually to use the word "actual" in some peculiar sense. His seventh definition is that pragmatism is "a conscious application to epistemology (or logic) of a teleological psychology, which implies, ultimately, a voluntaristic metaphysic." Supposing by "psychology" he means *not* the science so called, but a critical acceptance of a sifted commonsense of mankind regarding mental phenomena, I might subscribe to this. I have myself called pragmatism "critical common-sensism"; but, of course, I did not mean this for a strict definition.

Signor Giovanni Papini goes a step beyond Mr. Schiller in maintaining that pragmatism is indefinable. But that seems to me to be a literary phrase. In the main, I much admire Papini's presentation of the subject.

There are certain questions commonly reckoned as metaphysical, and which certainly are so, if by metaphysics we mean ontology, which as soon as pragmatism is once sincerely accepted, cannot logically resist settlement. These are for example, What is reality? Are necessity and contingency real modes of being? Are the laws of nature real? Can they be assumed to be immutable or are they presumably results of evolution? Is there any real chance, or departure from real law? But on examination, if by metaphysics we mean the broadest positive truths of the psycho-physical universe, – positive in the sense of not being reducible to logical formulae, – then the very fact that these problems can be solved by a logical maxim is proof enough that they do not belong to metaphysics but to "epistemology," – an atrocious translation of *Erkenntnislehre*. When we pass to consider the nature of Time, it seems that pragmatism is of aid, but does not of itself yield a solution. When we go on to the nature of Space, I boldly declare that Newton's view that it is a real entity is alone logically tenable; and that leaves such further questions as Why should Space have three dimensions? quite unanswerable for the present. This, however, is a purely speculative question without much human interest. (It would, of course, be absurd to say that tridimensionality is without practical consequences.) For those metaphysical questions that have such interest, – the question of a future life and especially that of One Incomprehensible but Personal God, not immanent in but creating the universe, – I, for one, heartily admit that a Humanism, that does not pretend to be a science but only an instinct, like a bird's power of flight, but purified by meditation, is the most precious contribution that has been made to philosophy for ages.

Section Two

Memorials and Remembrances of Peirce

IN MEMORIAM CHARLES S. PEIRCE

Francis C. Russell. "In Memoriam Charles S. Peirce. (Born 1839, died 1914.)." *The Monist* 24.3 (July 1914): 469–472.

Concerning genius, its advent discovery and nurture, history informs us that with rare exceptions its worldly case is one of the utmost austerity. On reflection this appears not at all strange.

Pro re nata, genius issues as an outlaw. It breaks over and through the accustomed rules and conceptions to the confusion and perplexity of a world otherwise comfortable in conventions regarded by it as settled possessions. Hence it is unwelcome. Hence the futility of all extant provisions in its favor. Had any Nobel foundation been in existence in 1841, would any of its benefits have found its way to Hermann Grassmann? Not in a thousand years. His case is typical of the general case of genius. Neglect and poverty are its portion in life. Then afterwards lapse of time reveals to a stupid, jealous and oftentimes spiteful world that it has conspired for the suffocation of a divine messenger.

In the late sixties the distinguished Prof. Benjamin Pierce of Harvard, lecturing before the Boston "Radical Club" on "The Impossible in Mathematics," spoke of his son Charles and of his expectations that the latter would develop and fertilize the vistas he had been able only to glimpse. On April 19, 1914, after at least a half century of assiduous probings into the most recondite and the most consequential of all human concerns, in a mountain hut overlooking the serene Delaware, in privation and obscurity, in pain and forsakenness, that son, Charles S. Peirce, left this world and left also a volume of product the eminent value of which will sooner or later be discovered, perhaps only after it has been re-discovered. For his issues have so far anticipated the ordinary scope of even professional intellectual exercise that most of them are still only in manuscript. Publishers want "best sellers." At least they want sellers that will pay the expenses of publication, and buyers of printing that calls for laborious mental application are scarce. Let me here with the utmost solicitude beg all to whom it falls to handle his books and papers to beware how they venture to cast away any script left by him.

Is this panegyric unwarranted? If so, then why should Professor James in his *Varieties of Religious Experience* call Mr. Peirce "our great American philosopher"? Why should Professor Schroeder base his great work "Exact Logic" on the prior work of Mr. Peirce? Why should the editors of the great

Century Dictionary employ Mr. Peirce to write so many of its logical, mathematical and scientific definitions? Why should the editors of Baldwin's Dictionary make a similar draft? Why should the editors of the *New York Evening Post* and of *The Nation* for years refer their books of serious import to Mr. Peirce for examination and review? Why should Dr. Carus recognize in Mr. Peirce a foeman worthy of his incisive steel on the fundamental problem of necessity?

Of course genius is unconformable. "'T is its nature to." It is often very hard to get along with. It tries the patience to the limit. It is so immersed in and so saturated with the inspiration of non-conformity that it often neglects to observe what is really and plainly only a merely defensive right on the part of the world of conformity. There ought to prevail a mutual spirit of forgiveness. If much is to be forgiven because of much love why should not much be forgiven to much promising and well directed power?

Mr. Peirce died a faithful man. His earlier studies led him far towards the goal of materialism, but in the course of those studies he was led to the discovery of that touchstone of values, that at first until the conception and word became mangled and aborted out of its true intent and utility he called Pragmatism, the principle that all rational significance of conceptions and of the terms embodying the same lies between the four corners of their *conceived* consequences in and to actual practice mental and otherwise. Since all logic is only a comparison and criticism of conceptions, this principle affects and effects our whole rational life and conduct. He was thus led to his conception of *reality* as that which has the natural prerogative of persistence as a possession forever. He perceived that intellectual entities, like, say, the law of gravitation or the ratio of the radius to the circumference of a circle, have just as abiding a persistence as any material entity and hence just as *real* an obtaining. Hence actual medieval realism, when better introduced and explained, is more pragmatically valuable than any case of nominalism or conceptualism can possibly be. The recognition of ideal realities opens out into the recognition that all existence is grounded in and upon that ideal substance the best names for which are *Form*, alias *Reason*, alias *Mind*, alias *Truth*, alias *the Good*, alias *Beauty*. The perception of Reason immanently in and throughout the universe and identical in nature with human reason solves at once the vexed question of the relation of body and mind, invites the soul to faith and repose and at the same time stimulates the soul to a vivid aspiration after cooperation with the Universal Spirit in accordance with its course of procession.

So lives Charles S. Peirce. The Universal Spirit has him and the world that neglected him will care for him – after many days perhaps, but most assuredly.

CHARLES PEIRCE AT JOHNS HOPKINS

Ellery W. Davis. "Charles Peirce at Johns Hopkins." *Mid-West Quarterly* 2.1 (October 1914): 48–56.

In the company of scholars and investigators which Daniel Coit Gilman gathered at Baltimore in the seventies and eighties was Charles S. S. Peirce, son of the Harvard mathematician, Benjamin Peirce, and considered by Sylvester (surely a capable judge) "a far greater mathematician than his father." But great though his mathematical powers were, it is not they alone which chiefly distinguished him among the scientists of his generation. Mathematics was simply one of the many fields of thought tilled by his active brain. At Harvard it was in chemistry that he had chiefly distinguished himself, but it might as well have been in physics. While lecturing at the Johns Hopkins, he was also conducting experiments for the U.S. Coast Survey. But it is perhaps for his researches in symbolic logic that he is chiefly known, being, indeed, the inventor of the logic of relatives, since developed by Russell into the logic of relations. He himself considered more important his theory of inductive reasoning; which certainly is more understandable and usable, for the logic of relatives is the acme of technicality and abstraction. As an indication of the power of this logic, let it suffice to say that in terms of it all of the two hundred and sixteen varieties of algebra classified by his father can be expressed, among which ordinary algebra, the algebra of imaginaries, and quaternions are special cases. Further, any algebra whatever can be brought under the domain of this system.

As for his theory of induction it is presented in a series of six articles in the *Popular Science Monthly* for 1878, though there is a briefer, but more technical exposition, in the *Johns Hopkins Studies in Logic*; while Baldwin's *Dictionary of Philosophy and Psychology* contains a number of Peirce's contributions bearing upon his theory. His lectures in advanced logic, delivered at Baltimore the second semester of 1880–1881, were wholly devoted to an examination of the logical foundations of the leading scientific theories of the time. They were based on his theory of induction, the gist of which is that induction is a safe process because it is a self-corrective one. Truth in science, as truth everywhere, is that conclusion concerning any matter toward which tend, in the long run, the opinions of competent investigators. If science lead us astray, more science will set us right. But at

any given time may not common sense be right and science wrong? In matters where the judgment of common sense is based on intimate experience this may certainly be the case, even though those who pass the judgment cannot always give an account of the manner in which they have arrived at it. Those judgments that are the result of race-experience most of us would be unable to distinguish from intuitions. We believe in them, but cannot tell how we have come to believe in them. Yet if they relate to matters of constant experience they may be trusted. For constant experience, by trial and error and correction, even though these be half unconscious, leads to true ideas. Even the lower animals have such ideas. The human animal, however, not infrequently holds to ideas that are altogether false. When this is so, it will in most cases be found: (1) that there has been no experience; or (2) that the experience has occurred under conditions that have ceased to exist; or (3) that in some other way the experience was not typical but unique and peculiar. It is conceivable that one might be led to have very strong convictions about the politics of the inhabitants of Mars; but neither the strength of one's convictions, nor the fact that he had got a number of people to agree with him, nor even that he had founded a society perpetuating his ideas from generation to generation would give the least validity to any conclusions reached by his possibly intensely interesting speculations. The probability that one shall be right in a matter concerning which he knows nothing and has no experience – direct, indirect, or remote – is zero. A blindfolded marksman cannot be expected to hit the bull's-eye.

With most of us true ideas and false are mingled in inextricable confusion. Is there a way in which they may be disentangled? Pascal seemed to think that clearness is the touchstone of truth, – as it certainly is a help. One service of Peirce is that by his maxim of pragmatism he has shown us how to clarify our ideas somewhat. This maxim, as stated in the *Popular Science Monthly* for January, 1878, is as follows: "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object." How completely this criterion brushes aside such speculations as those concerning Martian politics! How many interminable discussions are cut short by its application! Two men are hotly contending as to whether the first life on earth is due to spontaneous generation or to special creation; they apply to a third to decide between them. "Tell me," he says to them, "just what your spontaneous generation is; that is, how I am to know it, supposing a case to occur before me; and tell me also just how I am to distinguish a special creation. Of course, if the phenomena are all the same, there is really nothing to dispute about." To be sure, the pragmatic maxim, like many another, can be misapplied; in the opinion of its author, it has been misapplied. In fact, he later admitted that his own statement had been inadequate, that, besides immediate practical

consequences, one should have in view consequences in the long run, fitting into a general reasonable view of the universe.

A belief is a habit of thought formed, as are all habits, mainly by repetition. To say that the belief is based on experience, is merely to say that the occasions calling for the exercise of the correct habit have been sufficiently numerous to lead to its formation. To draw conclusions under the dominance of a belief is strictly analogous, likewise, to action in accordance with habit. Deduction is the correlative of willing; induction, of habit-learning; reasoning by analogy or hypothesis is the correlative of feeling. If a habit be strong, then, given the compelling circumstances, the resulting action can be predicted. We say of a man that he *always* acts in such or such a way. If his habit be less strong, he may still be *liable* to act in the characteristic way; and we may perhaps say that the chances are three to one that he will. But knowing that there were certain circumstances tending to form a habit, we should find it very difficult, wellnigh impossible, to tell how strong a habit a man placed in those circumstances would form. Still one could safely wager that, taken as they come, men would be unlikely to form habits leading to disastrous results in the given circumstances. In the long run, most of them would certainly learn better; a belief that mankind can walk on water would not be likely to spring up among sailors.

Again, knowing that under certain circumstances a friend acts in a certain way, can we from the action assume the circumstances? Can we calculate the probability that these circumstances, rather than some other circumstances, are the cause of the action? Does the fact that this friend carries a valise tell us whether he is going to a train or coming from it? When one feels that he is singing correctly, is he really singing correctly? Is feeling that we know anything, more than knowing that we feel? Were those who let Sully escape at the massacre of St. Bartholomew justified in assuming that he who carried a missal was a Catholic? Can we in any of these cases calculate the numerical probability of the conclusion? This point is worth dwelling upon; for it may enable us to see why Peirce, though trained as a mathematician, was not misled by that school of mathematicians, with Laplace at the head, who pretended to calculate the probability of an induction; as though, forsooth, one could put a lot of universes in a hat and wager seven to three, say, that our sort of universe would be drawn out. Does this look absurd? Well, Laplace calculated that the odds against the then received mass of Jupiter being in error by two per cent. was 999,308 to 1. The perturbations of Juno proved, nevertheless, that it was two per cent. in error. Neither did Peirce assume, as did Mill, any such principle as the "uniformity of nature," but merely that, in observing a series of events we were more likely, in the long run, to observe what did characterize the series than what did not.

Peirce 's lectures were illustrated, as has been intimated, by important theories from the principal sciences. At the very beginning it was necessary

to emphasize the distinction between mathematics and the other sciences, though these others may, at least in certain of their branches, tend to become mathematical. It is true, as Sylvester pointed out in his controversy with Huxley, that mathematicians use induction; but that does not make of mathematics an inductive science. The final proofs, and no true mathematician rests content until he gets these, – the final proofs are always deductive. This is one characteristic of mathematical reasoning; but another, quite as obvious, is the intricacy of the reasoning. Whatever the subject matter may be, – number, space, time, force, groups, relations of any sort, – if the final proofs are obtained by intricate deductive reasoning, then we are thinking mathematically. In the *Century Dictionary*, to which he was an extensive contributor, Peirce defined mathematics as "the study of ideal constructions (often applicable to real objects) and the discovery thereby of relations between the parts of these constructions before unknown." This conception supplements the earlier idea, as indeed it was supplemented in his lectures, by pointing out that by deduction, as well as by induction, one is led to discover truths before unknown. For that matter it is hardly likely that any considerable part of mathematics could ever have been developed except by the help of deduction; by this process the mathematician has been led into ideal fields that had else remained wholly unexplored; reason has transcended imagination. Cantor would even replace the terms *pure* and *applied* mathematics by the terms *free* and *constrained* mathematics. The physical sciences may become, and have become in some degree, mathematical; but free they cannot become and yet remain physical. The service of mathematics in these sciences is that one is enabled by it to make long-range predictions; when these predictions are found, by observation and experiment, to be in consonance with the facts, then there is reason to believe that a consistent, well-ordered theory is growing up. The discovery of a Uranus verified not only the prediction thereof, but also them previous observations and the reasoning based on these observations which led to the prediction; it verified the scientific method of astronomy. Similarly the discovery of Galium was a verification of Mendelieff's law and of the science of chemistry; while the discovery of the Hertzian waves rendered a like service to physics. Thus, there is need for the verification of mathematical deductions. Without this verification, they are dangerous conclusions; and the farther the deductions are carried, the greater the danger. It is precisely the most far-reaching speculations of science, those that get farthest away from observed facts, that must be suspected. It is a characteristic of many theories, for example, the wave-theory of light, that while up to a certain point they triumphantly explain the facts, yet, as one pushes the theory farther and farther, a realm is reached that is mainly a realm of conjecture. Hence the need for crucial for experiments.

The matter was neatly illustrated one evening by Peirce before the Johns Hopkins Scientific Society. He reviewed Priestley's investigation concerning

atomic weights and specific heats. On comparing the specific heats and the atomic weights of each of the monad elements, Priestley found that he could write a formula expressing each specific heat in terms of the corresponding atomic weight. This is easy; any small set of numbers can thus be a paired off with another small set. But when Priestley tried his formula upon the dyad elements, it did not work. He found, however, that by a modification he could get a formula to hold for both monads and dyads. This formula did not hold, however, for the triads. So there was another modification, and after that still another. When in this way he got a formula holding, say, for half the elements, would there be any probability of its holding for the others? If not, why not? The method taken to show the fallacy of the assumption of such a probability was to assign the specific heats at random among the elements and then show that Priestley's method would work just as well as ever. Priestley's predictions had uniformly failed; thus no confidence could be placed in his final prediction. Again, of all the conics that pass through four points, only one, in general, passes through an arbitrary fifth point. But when an astronomer calculates an orbit from a few observations, and then finds that the planet is always to be found following that orbit with reasonable approximation, his computation and the underlying theory are alike verified. Why is not this an exact verification? In brief, because observations are not exact, neither those used for the basis of calculation nor those used to test the motion of the planet in the orbit. Nor are we exactly given all the forces acting upon the planet; some of them may be both unknown and unsuspected. Our observations are discordant and have to be reduced and smoothed by methods based on the theory of chance. Law, if law there be in these variations, has not manifested itself, and to us it is as though non-existent. But a study of the conception chance has in the very negation of law revealed a reign of law. Laws of chance, however, are never exactly kept, else would they cease to be laws of chance and freedom would succumb to habit.

May not the laws of the universe be the acquired habits of the universe? May there not still be a possibility of the modification of these habits? May there not be the possibility, forever, of the formation of new habits, new laws? May not law be evolved from a primordial chaos, a universe of chance? In the play of chance still apparent may we not see the continual renewal of the life of the universe, a continual renewal of the capacity for habit-forming and growth? Tracing the evolution backwards we are led to the conception of absolute chance. This is of course a limiting conception; and we need not assume its actual existence, for there are countless ways in which a limit may be forever approached and yet never reached. It is not wise, certainly it is not pragmatic wisdom, to go too far from facts. But does not the universe now behave as if in transition from less of law to more? Does it not behave as if there were a never failing source of new life, new energy, which is to be, in turn, brought under the reign of law? There is a certain likeness, in all this,

to the "creative evolution" of Bergson, though to me it seems a clearer and more definite conception than Bergson's, and one more in touch with science, more in harmony with experience and observation. For it does not require us to reject the supremacy of intellect and reason; certainly it would not use the triumphs of science as an argument against science, or say that science is successful because of its limitations, because blind to everything except the grossly material. Surely it is sufficient to admit, as does Peirce, that many matters, and vitally important matters, have not as yet been brought under the domain of reason; to admit that many matters never can be reduced to reason; and again to admit that action is demanded and always will be demanded, in matters irrational. This is merely saying that where we have not knowledge, we are compelled to go ahead as well as we can without it. Who shall set bounds to observation, to experiment, to the reasoning, inductive and deductive, based thereon? Surely, there is an infinite possibility for the formation and development of ever new bodies of knowledge – that is, new sciences. The conception of the universe in transition but increases this possibility; even the laws of the universe are evolving and so have themselves laws of evolution. In the words of Peirce, "in spite of the general shipwreck of ideas, the flotilla of knowledge is constantly increasing."

It would require great technicality to present any large number of Peirce's criticisms of scientific theory, but I will indicate a few of these. Mechanics expresses all motion and force in terms of five units, three of space, one of time, one of mass. What are the masses of bodies? Numbers which we attach to them in order that our equations of motion may be satisfied. Can there be action at a distance? That is, can a body act where it is not? What do we mean by the presence of a body except that it has certain effects, exerts a certain force? The table is *there*, because, when we press there, it presses back. Very well; if repulsive forces prove the existence of a body, so do attractive: that is how Uranus was discovered. If, then, a body is where it acts and the law of gravitation is true, each and every body exists throughout the universe, and action at a distance is not action where a body is not, but merely where its attraction prevails over its repulsion. The boundary of a body is the place where vanish certain differential coefficients. The reasoning by which chemists were in the first instance led to the atomic theory was very bad. The law of simple proportions was not helped by the conception of atoms. The chemists did not then, or for a long while after, give a reason why atoms should not combine in very complicated proportions, say 3,872 atoms of hydrogen to 11,916 of oxygen. The real proof of the existence of molecules and atoms was furnished by physics in connection with one of its great triumphs, the kinetic theory of gases. The triumph of chemistry was Mendelieff's law. The establishment of this law was remarkable because it is difficult either to establish or disestablish laws of periodicity; waves so melt into waves. For example, it has so far baffled observers, whether there may not be some connection

between lunar movements and earthly weather. The progress of chemistry will lie in the explanation of valency, which includes why elements combine in simple proportions. Many of the recondite phenomena of physics, chemistry, and especially biology may be explained by supposing the atoms composed of atomicules. To-day we should substitute "ions" for Peirce's "atomicules"; but his idea was prophetic. One of his most striking lectures had to do with the application of this conception to the phenomena of growth and reproduction. As to whether biologic phenomena can be explained mechanically, he remarked that the processes to which the conservation of energy is applicable are reversible, but life is an irreversible process. He held, further, that without catastrophes from time to time the accumulation of minute chance variations by the survival of the fittest was insufficient for the development of a new species. His reason was that chance variations, in accordance with Bernoulli's law, would always preserve the dominance of the original type. He admitted that, assuming (in accordance with his philosophy) the habit-acquiring property in the universe, the development of a new species by minute variations is possible; but he insisted that the biologists had never called attention to this fact. Remember that this was thirty years ago.

In such theories as the scientists were then developing, Peirce saw the germ of the philosophy of the future, the foundations of an edifice yet to be erected. The attempts of the Germans to erect a philosophic edifice in the air, without such foundations, merely caused him to smile. Had not the German philosophers proven each other false? Why give them ear? Kant, instead of asking how are synthetic judgments *a priori* possible, should have asked the simpler and more profitable question, how are synthetic judgments possible. Perhaps he had then been led to a correct theory of induction. As for a *Ding an sich*, it could be only a thing out of relation—that is, out of existence. Mill's *Logic* he characterized as a great philosophic work, embodying the philosophy of ordinary mankind. But Mill did not know what was important in science. To such a degree was this true that most of the instances of scientific induction which he gave, in the first edition of his book, afterwards turned out to be bad inductions. Mill should have concluded from this fact that there was something wrong with his theory. Moreover, though on first reading seemingly clear, Mill is really not so; study of his work brings out ambiguities and contradictions. During the beginning of one's study of logic, we were told – that is, during the first ten years – one should devote oneself entirely to learning the exact meaning of words. Mill had neglected this.

Perhaps I have, in some measure, reproduced the atmosphere of Peirce's Hopkins lectures. To complete the conception of the man, it would be necessary to exhibit him in his talks before the Logic Club, necessary to speak of his papers in the old *Journal of Speculative Philosophy* and in the *Monist*, besides more technical papers elsewhere. But this would require profound and long-continued study. I may say merely that the deeper one

enters into the spirit of Peirce's teachings the more logically and philosophically satisfying, the more complete and harmonious and inclusive they seem to be.

PEIRCE AS A PHILOSOPHER

Josiah Royce and Fergus Kernan. "Peirce as a Philosopher." *Journal of Philosophy, Psychology and Scientific Methods* 13.26 (21 December 1916): 701–709.

Charles S. Peirce called himself, in his later years, simply a logician. That he was a philosopher he fully recognized. But the term logician seemed to him more apt for a person engaged in the researches to which he was most devoted. For Peirce, rightly, logic would constitute the best possible foundation for a sound philosophy. But most philosophers, as he very correctly saw, were not logicians and would not be likely to become such until some very great reform occurred. Peirce united very wide knowledge of the history of philosophy with a generally fair-minded disposition to a discriminating criticism of philosophers, and with a capricious, though generally very well restrained interest in philosophical polemic, whose arts he regarded with a general skepticism and pursued with a usual moderation. But all the more he felt that the name logician stood rather for what the philosopher ought to be than the name philosopher for what a well-trained logician was most likely to be. So it was as logician that he wanted to be judged.

Nevertheless he was a philosopher. Like a good many other recent philosophers, he desired his philosophy to be what is so often called scientific. He desired that the methods of the various natural sciences, and in particular of the most exact natural sciences, such as physics and chemistry, should be the models of his philosophical speculations. He had a better right to use the term scientific philosopher than is customarily the possession of those who use this term. His early training here in Cambridge, in his father's house and in the Lawrence Scientific School, was, first, in mathematics (since his father, Professor Benjamin Peirce, the elder, was one of the greatest American mathematicians). Peirce was fond of saying that he grew up in a laboratory. Later, he did some good work in the observatory. Still later, he was busy with the conduct of a good many statistical researches in connection with the Coast Survey. He was early and long familiar with exact measurement, and with the theory and practice of the determination of the errors of measurement in the measuring sciences. So, when he spoke of being a scientifie philosopher, he was not without a really close knowledge of what scientific method in philosophy ought to mean. That in addition he did not fail to appreciate some at least of the great historical thinkers was due to his wide, manifold, and in

some respects, very thorough erudition – an erudition that remained, like many other of his personal possessions, somewhat capricious, despite its frequent thoroughness. At any rate, whether he worked in any one of his publications rather as logician or as general philosopher, Peirce had no interest in founding a school, belonged to none of the existing schools, had a wide range of appreciation for other minds, and a very great disposition to bind inductive methods with speculative interests.

That Peirce should be classed amongst the evolutionists is, for many reasons, natural. His early education was finished, and his maturer scientific work begun, in the great decades of the modern evolutionary movement. His principal contribution to fundamental logical theory, that is, his own highly technical definition of the three categories or modes of being,[1] which he made fundamental in all his speculations, was published in the year 1867 in the "Proceedings of the American Academy of Arts and Sciences in Boston." His essays on scientific method in the *Popular Science Monthly* were printed in the early seventies, – I believe from 1873 to 1876. "The Studies in Logic," by the members of the Johns Hopkins University, a book composed partly by himself and partly by his advanced students in logic at Baltimore, was published in the early eighties. Thus, his work brings him into close contact with the formative period of the modern doctrine of evolution.

But Peirce was never a follower of Spencer, whose relation to natural science was not such as seemed satisfactory to a mind of Peirce's type and training. Nor was Peirce very prominently influenced by Darwin, although, of course, he knew Darwin well. For Peirce was, once for all, a man rather of physical and chemical training and of practice in the use of various instruments of precision, than a man at all carefully trained in the biological sciences. His interest in human nature was wide and varied, and, in his fragmentary way, he contributed notably to the study of various psychological problems – in particular, to problems relating to the threshold of sensation, and to various other problems of the psychology of perception.

The "evolution" of Peirce was therefore no variation of the evolutionary philosophy of Spencer or of Spencer's disciple, Fiske. Such minds left him uninterested. History, and especially the history of thought, and in particular of the various natural sciences, interested Peirce deeply. But his mind, when he thought of evolution, turned its attention to the matters which most fascinated him as a logician. He wanted to know not merely about the evolution of any one group of physical phenomena, whether stellar or terrestrial, whether organic or inorganic. He wanted to know about how the laws of nature came to be what they now are. For him the doctrine of evolution was

[1] (1) Things, that is, individuals; (2) objects of conception, that is, universals; and (3) signs. Peirce often mentioned, in conversation, these "three sorts of being" as the essential feature of his philosophy.

to be, if it should succeed at all, a doctrine of the evolution of the laws of nature, a doctrine regarding how the world came to acquire not the plants, nor the animals, nor the solar systems, nor the Milky Way, that now it has, but how the laws of nature came to be what they are at all.

Peirce's speculations upon these topics were very highly original, were continued over a period of very many years, were perhaps the most characteristic productions of his whole personal character and mental interest which, apart from his technical logical researches, we possess. These speculations very greatly interested William James and played their part in the formulation of that whole "philosophy of change" on which William James's latest interests were most centered. Yet to James the principal illustrations of this doctrine of the evolution of natural law always remained unfamiliar and somewhat too technical, so that James listened, in company in which I was sometimes privileged to be present – listened, I say, to these aspects of Peirce's philosophy with an interest which certainly did not follow Peirce's thought into precisely those regions which Peirce himself most valued. The ideas here in question are so manifold and complex that I can not hope to give you any adequate idea of them. Let me simply indicate a few of them.

Most philosophers, if they concern themselves with the laws of nature at all, begin by regarding certain fairly simple laws, as, so to speak, the only examples of canonical and legitimate sorts of natural law that we ought to recognize. Mechanical laws or exactly quantitative laws or formulas capable of precise natural formulation, these such philosophers regard as the reasonable sorts of law. In case a man does not believe that these types of law are universal, are pervasive, or are canonical, his philosophy is usually likely to be some sort of teleology, or some doctrine that freedom, or that spiritual significance rules the world, and that exact law is subordinate to more or less sentimentally conceived ideals.

But Peirce's philosophy was dominated by quite other modes of thinking whose origin lay partly in his experience in dealing with the problem offered by the efforts of science to eliminate or to reduce to rule the errors which are encountered in the actual measurements which the physical sciences endeavor to make. Partly his ideas on these subjects were due to still more general logical considerations which influenced him greatly from the time they first met his notice. The laws of nature that we actually confirm – so Peirce was accustomed to say – are laws which, so far as we can verify them, are *approximately* true. All measurements are inexact, and have to be corrected by further measurements. The moon which astronomers observe, especially if the observations extend over many centuries, as, by the study of the records of ancient eclipses we can make them extend – the moon of observation – never agrees precisely with the ideal moon which the astronomical theory demands. Of course as astronomical knowledge grows toward perfection, the discrepancy between theory and fact grows less. That is simply because the better we know

nature, the more we can discover how to adjust theory and fact, one to the other. But if we extend our survey of nature from the instant to the year, from the year to the century, from the century to the geological period, or to the evolution of a stellar system, we get evidence that natural laws which hold with appreciable exactness and within the errors of probable observation, during short periods of time, no longer hold with such precision for very long periods of time. There is a reasonable inductive evidence that the laws which nature follows are themselves only approximately true and are subject to evolution, so that Newton's law of gravitation is presumably very nearly true at the present time for the present moon and planets, for the present stellar systems. But it is equally probable that this law is even now only a close approximation, not an absolutely necessary order of things. For similar inductive reasons, it becomes probable that, in so far as Newton's law of gravitation now holds true, it did not always hold true, and that this, like all other laws of nature, is a product of evolution.

What an inductive study of nature makes probable, Peirce was accustomed to regard as what the rightly trained mind of the logical student of nature would regard as that which would be likely to be characteristic of a nature in which evolution has taken place. For Peirce rejected, upon logical grounds, the doctrine that the natural world or any other portion of the universe known to us, must necessarily be subject to any *a priori* laws, except the purely logical ones, or to a perfectly exact law of causation. Regularity, as Peirce was especially fond of saying, is not necessarily a self-evident type of any real world which is known to us. Regularity, where it exists and in so far as it exists, is precisely that aspect of the world *which most stands in need of explanation*. If you find a pack of cards lying in confusion, you suppose that to be the natural result of their having been thrown down in a chance way by somebody whose dealings with them were governed by no necessary, rigid, or precise law. That is, the chance disorder of the pack of cards thrown down at random needs, on the whole, no explanation. But if you find the cards in some precise order, as, for instance, in the order required by a certain hand in a certain game, then you stand in the presence of a fact which needs explanation. You very properly and logically ask why they came to be in this order.

Precisely so the relatively chance order of the starry heavens in the region of the Milky Way calls for no scientific explanation. But if the planets conform to Kepler's laws, if the moon of astronomical theory approximately agrees with the moon of observation, it is, logically speaking, a fair question to ask why the planets and the moon behave thus, or, in evolutionary terms, how they came to do so.

Precisely so Newton's laws of motion, in so far as they are approximately true of the physical world, demand an explanation and an evolutionary explanation. If such can be hypothetically furnished, we thereby come to see

why and how the Newtonian natural laws have come to characterize the real world.

Thus every sort of natural law, precisely in so far as it is approximately exact law, logically demands, if possible, an explanation in terms of the theory of the evolution of natural law. And, empirically speaking, as Peirce was never weary of insisting, there is a wide range of empirical evidence that the present laws of nature are the products of an evolutionary process. In this thought consisted the evolutionary theory of Peirce. A brief mention now of some of his other leading ideas must close this essay on his philosophy.

The second of Peirce's leading ideas dominated his highly remarkable and original version of inductive logic. I have sometimes ventured to call this doctrine by a name which Peirce himself, in some of his early papers, suggests by his illustrations, though I believe that he had never formally used it. This name is the "Insurance Theory of Induction." I have no time to expound it here. It was originally set forth in the series of articles in the *Popular Science Monthly* entitled "Illustrations of the Logic of Science."

The third leading idea of Peirce's philosophy to which I wish to direct attention results from his theory of the evolution of natural law, and expresses the result of his most synthetic survey of cosmological problems. This is the theory according to which chance is objective, and the whole universe expresses a process that has two extremes, with chance as a limit towards one end and rigid necessity as a limit at the other end of an endless temporal process.

The fourth of Peirce's leading ideas relates to the teleological and mental aspect of the world, that is, to the idealistic tendency which formed a motive in Peirce's thought, but which never became amplified in a dogmatic idealistic metaphysics. This idea had a certain similitude to ideas which Bergson has recently made interesting, though there is never very close agreement between Peirce's ideas and those of Bergson. But Peirce has his own theory as to the part which intuition plays in the work of the human mind and in the guidance of scientific research. Peirce's thoughts on this subject are fragmentary. Indeed his entire life work may in a certain sense be called fragmentary. Yet it is my belief that his ideas will amply repay study. As he himself says in the conclusion to that brilliant essay, "The Architecture of Theories," – "may some future student go over this ground again and have the leisure to give his results to the world."

The Peirce Manuscripts

All the remaining papers of Peirce have now been placed under the joint care of the Harvard department of philosophy and of the Harvard library. The papers are in many ways fragmentary, but may be regarded with confidence as containing some very important things. We have also in our possession

copies of his various published essays, which are also somewhat fragmentary and which in their original publications were pretty widely distributed in various journals and learned transactions. A word about these seems in order before passing on to a description of Peirce's unpublished papers and manuscripts.

Of Peirce's published works the most important from a purely scientific standpoint was a photometric research upon a group of stars selected for that purpose by Professor Pickering, the results of this research being still valuable, despite the changes in modern methods which have taken place in the field.

Another contribution of Peirce's to the world's storehouse of scientific knowledge is none the less valuable because it is generally unknown. I refer to the scientific vocabulary of the first edition of the Century Dictionary, of which Peirce was the author in so far as that portion of the Century Dictionary had any one author at all. Peirce's vast erudition in the history of science and particularly his familiarity with scholastic philosophy to which he was long devoted made his work as a dictionary-maker exceedingly valuable.

Nearer to philosophy one comes perhaps when one speaks of Peirce's researches on the algebra of logic and in particular in the logic of relatives. Many of the most recent researches, including those of Bertrand Russell, are still due to his influence, although Russell, as I think, has a somewhat inadequate sense of his own generally indirect indebtedness to Peirce's work in this field. The logical essays of Peirce which deal with synthetic logic and with the logic of relatives were collected and brought into a sort of a synthesis by Schroeder. A list of them can be found in Schroeder's *Algebra der Logic* (Appendix to Vol. 1).

Distinct from these researches in exact and, in general, in deductive logic are Peirce's manifold contributions to the logic of induction. The most important essays of Peirce in this field appeared in the early seventies of the last century in the *Popular Science Monthly* under the general heading of "Illustrations of the Logic of Science." Of the researches of Peirce on this subject, I do not hesitate to say that they are still very imperfectly appreciated and are of enormous importance.

As is well known, William James considered Peirce as the father of pragmatism. Yet what little Peirce published on this subject will go to bear out the remark that there is little in common between his pragmatism and that of James. Peirce's *Monist* article entitled "The Issues of Pragmaticism" was written for the express purpose of maintaining the independence of his thought from either the pragmatism of James or the humanism of Schiller. The word practicism seemed to him best to describe the philosophy of these two thinkers. As for Peirce himself, when he saw his pragmatism threatened with too much popularity he found it easy to take refuge in a new word, namely, "pragmaticism" which, as he liked to say, "seems ugly enough to escape the kidnappers."

It is not always easy to understand Peirce. He never regretted the fact that most people found it hard to follow his ideas. He deliberately chose that most of his researches should be concerned with highly technical topics and should be secure from the intrusion of the uncalled. Upon occasion he could be brilliantly clear in his expressions of highly complex and recondite problems, although this clearness was a capricious fact in his life and in his writings, and was frequently interrupted by a mode of expression which often seemed to me to be due to the fear, after all, that in case mediocre minds found themselves understanding too many of his ideas, they would be led to form too high an impression of their own powers. One finds this tendency towards what might be called "impenetrability" especially evident in his manuscripts. Too often the reader meets with a thought of surpassing brilliancy and follows it eagerly, only to have it disappear like the cuttlefish in an inky blackness of its own secretion.

The most complete manuscripts of the Peirce collection include copies of the "Lectures on Pragmatism" which were delivered privately to a circle of friends in Cambridge and of the Lowell Lectures on Logic of 1903–4. It was these latter which James described as "flashes of brilliant light relieved against Cimmerian darkness" – "darkness" indeed to James as to many others must have seemed those portions on "Existential Graphs" or "Abduction." Yet it seems strange that the very striking lectures on "Induction," "Probability," "Chance," and "Multitude" should have attracted nothing more than a passing notice.

The two works, which, if they could ever have been completed, were intended by Peirce to be the proper fruits of his studies, were a "History of Science" and a "Comprehensive Treatise on Logic." Both of these remain unfinished; and the value of his fragmentary manuscripts will largely depend upon the extent to which future editorial work can bring into unity the very considerable fragments which his remains contain of the studies which were intended to form part of these works. So far as his erudition and inventiveness were conditions for the writing of these two intended books, Peirce possessed both these characters most abundantly. No greater mind has ever appeared in America in respect of the powers needed for the writing of these two projected works. No more ample erudition has ever existed amongst us regarding the topics which were here in question.

Of especial importance from an historical standpoint are the writings of Peirce which deal with Aristotle and with the scholastic philosophy. Aristotle, Peirce read in the original carefully and for many years, and his manuscripts contained many original expressions of his independent opinion about the problems connected with the interpretation of the Aristotelian philosophy. For the scholastic philosophy Peirce always had a very great interest. Duns Scotus was among his favorites, both as logician and as metaphysician. He was not attracted to the Scholastics by any of their theological relations, but by an

interest in their skilfully devised vocabulary, and in the beautiful array of their word conceptions. A treatise which I recently found among his manuscripts entitled "Duns Scotus and Occam" sets forth very clearly the issues of realism and nominalism in the light of modern thought and goes far towards showing that many contemporary philosophers, as, for instance, Bertrand Russell, are not so far away from scholasticism as the calendar might indicate.

The following constitutes a list of the titles of the more important among the Peirce manuscripts. It is far from being complete, yet it may serve to suggest the varied and in many respects original nature of Peirce's philosophical and scientific researches.

" On Retroduction, Induction, and Abduction." " Minute Logic." "Treatise in Logic": Chapter I, "Prelogical Ideas"; Chapter IV, "Ethics"; Chapter VI, "The Three Kinds of Signs"; Chapter VII, "The Aristotelian Syllogistic"; Chapter VIII, "The Algebra of the Copula"; Chapter XI, "On Logical Breadth and Depth"; Chapter XIII, "Simplification of Dual Relatives"; Chapter XIV, "Quantification of the Predicate"; Chapter XV, "Existential Graphs." "Synechism." "Lectures on the British Logicians." "Positivism." "Aristotle on Categories." "Molecules and Molecular Theory." " Prospect of Air Sailing." "On Representation." "On small Differences in Sensation." "Notes on Royce's World and Individual." "Illustrations of Dynamics." "Theory of Numbers." "Refutation of Transcendentalism." "*A Priori* and *A Posteriori.*" "The Seven Systems of Metaphysics." "Quantity and Quality." "On Multitude and Number." "Logic of History." "Lectures on Kant." "On Mind and Matter." "Logic of Continuity." "On the Associations of Ideas." "Spinoza." "Hume – a Critical History of Logical Ideas."

THE PRAGMATISM OF PEIRCE

John Dewey. "The Pragmatism of Peirce." *Journal of Philosophy, Psychology and Scientific Methods* 13.26 (21 December 1916): 709–715.

The term pragmatism was introduced into literature in the opening sentences of Professor James's California Union address in 1898. The sentences run as follows: "The principle of pragmatism, as we may call it, may be expressed in a variety of ways, all of them very simple. In the *Popular Science Monthly* for January, 1878, Mr. Charles S. Peirce introduces it as follows:" etc. The readers who have turned to the volume referred to have not, however, found the word there. From other sources we know that the name as well as the idea was furnished by Mr. Peirce. The latter has told us that both the word and the idea were suggested to him by a reading of Kant, the idea by the *Critique of Pure Reason*, the term by the *Critique of Practical Reason*.[1] The article in the *Monist* gives such a good statement of both the idea and the reason for selecting the term that it may be quoted in extenso. Peirce sets out by saying that with men who work in laboratories, the habit of mind is molded by experimental work much more than they are themselves aware. "Whatever statement you may make to him, he [the experimentalist] will either understand as meaning that if a given prescription for an experiment ever can be and ever is carried out in act, an experience of a given description will result, or else he will see no sense at all in what you say." Having himself the experimental mind and being interested in methods of thinking, "he framed the theory that a *conception*, that is, the rational purport of a word or other expression, lies exclusively in its bearing upon the conduct of life; so that, since obviously nothing that might not result from experiment can have any direct bearing upon conduct, if one can define accurately all the conceivable experimental phenomena which the affirmation or denial of a concept could imply, one will have therein a complete definition of the concept, and *there is absolutely nothing more in it*. For this doctrine, he invented the name *pragmatism*."

After saying that some of his friends wished him to call the doctrine practicism or practicalism, he says that he had learned philosophy from Kant, and that to one "who still thought in Kantian terms most readily,

[1] See article on "Pragmatism," in "Baldwin's Dictionary," Vol. II, p. 322, and the *Monist*, Vol. 15, p. 162.

praktisch and *pragmatisch* were as far apart as the two poles, the former belonging to a region of thought where no mind of the experimentalist type can ever make sure of solid ground under his feet, the latter expressing relation to some definite human purpose. Now quite the most striking feature of the new theory was its recognition of an inseparable connection between rational cognition and human purpose."[2]

From this brief statement, it will be noted that Peirce confined the significance of the term to the determination of the meaning of terms, or better, propositions; the theory was not, of itself, a theory of the test, or the truth, of propositions. Hence the title of his original article: "How to Make Ideas *Clear*." In his later writing, after the term had been used as a theory of truth, – he proposed the more limited "pragmaticism" to designate his original specific meaning.[3] But even with respect to the meaning of propositions, there is a marked difference between his pragmaticism and the pragmatism of, say, James. Some of the critics (especially continental) of the latter would have saved themselves some futile beating of the air, if they had reacted to James's statements instead of to their own associations with the word "pragmatic." Thus James says in his California address: "The effective meaning of any philosophic proposition can always be brought down to some particular consequence, in our future practical experience, whether active or passive; the point lying rather in the fact that the experience must be *particular*, than in the fact that it must be *active*." (Italics mine.)

Now the curious fact is that Peirce puts more emphasis upon practice (or conduct) and less upon the particular; in fact, he transfers the emphasis to the general. The following passage is worth quotation because of the definiteness with which it identifies meaning with both the future and with the general. "The rational meaning of every proposition lies in the future. How so? The meaning of a proposition is itself a proposition. Indeed, it is no other than the very proposition of which it is the meaning: it is a translation of it. But of the myriads of forms into which a proposition may be translated, which is that one which is to be called its very meaning? It is, according to the pragmaticist, that form in which the proposition becomes applicable to human conduct, not in these or those special circumstances nor when one entertains this or that special design, but that form which is most applicable to self-control under every situation and to every purpose." Hence, "it must be simply the general

[2] Kant discriminates the laws of morality, which are *a priori*, from rules of skill, having to do with technique or art, and counsels of prudence, having to do with welfare. The latter he calls pragmatic; the *a priori* laws practical. See "Metaphysics of Morals," Abbott's trans., pp. 33 and 34.

[3] See the article in the *Monist* already mentioned, and another one in the same volume, p. 481, "The Issues of Pragmaticism."

description of all the experimental phenomena which the assertion of the proposition virtually predicts." Or, paraphrasing, pragmatism identifies meaning with formation of a habit, or way of acting having the greatest generality possible, or the widest range of application to particulars. Since habits or ways of acting are just as real as particulars, it is committed to a belief in the reality of "universals." Hence it is not a doctrine of phenomenalism, for while the richness of phenomena lies in their sensuous quality, pragmatism does not intend to define these (leaving them, as it were, to speak for themselves), but "eliminates their sential element, and endeavors to define the rational purport, and this it finds in the purposive bearing of the word or proposition in question." Moreover, not only are generals real, but they are physically efficient. The meanings "the air is stuffy" and "stuffy air is unwholesome" may determine, for example, the opening of the window. Accordingly on the ethical side, "the pragmaticist does not make the *summum bonum* to consist in action, but makes it to consist in that process of evolution whereby the existent comes more and more to embody those generals...; in other words, becomes, through action an embodiment of rational purports or habits generalized as widely as possible."[4]

The passages quoted should be compared with what Peirce has to say in the Baldwin Dictionary article. There he says that James's doctrine seems to commit us to the belief "that the end of man is action – a stoical maxim which does not commend itself as forcibly to the present writer at the age of sixty as it did at thirty. If it be admitted, on the contrary, that action wants an end, and that the end must be something of a general description, then the spirit of the maxim itself ... would direct us toward something different from practical facts, namely, to general ideas.... The only ultimate good which the practical facts to which the maxim directs attention can subserve is to further the development of concrete reasonablness.... Almost everybody will now agree that the ultimate good lies in the evolutionary process in some way. If so, it is not in individual reactions in their segregation, but in something general or continuous. Synechism is founded on the notion that the coalescence, the becoming continuous, the becoming governed by laws, the becoming instinct with general ideas, are but phases of one and the same process of the growth of reasonableness. This is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically. It is not opposed to pragmaticism ... but includes that procedure as a step."

[4] It is probably fair to see here an empirical rendering of the Kantian generality of moral action, while the distinction and connection of "rational purport" and "sensible particular" have also obvious Kantian associations.

Here again we have the doctrine of pragmaticism as a doctrine that meaning or rational purport resides in the setting up of habits or generalized methods, a doctrine passing over into the metaphysics of synechism. It will be well now to recur explicitly to Peirce's earlier doctrine which he seems to qualify – although, as he notes, he upheld the doctrine of the reality of generals even at the earlier period. Peirce sets out, in his article on the "Fixation of Belief,"[5] with the empirical difference of doubt and belief expressed in the facts that belief determines a habit while doubt does not, and that belief is calm and satisfactory while doubt is an uneasy and dissatisfied state from which we struggle to emerge; to attain, that is, a state of belief, a struggle which may be called inquiry. The sole object of inquiry is the fixation of belief. The scientific method of fixation has, however, certain rivals: one is that of "tenacity" – constant reiteration, dwelling upon everything conducive to the belief, avoidance of everything which might unsettle it – the will to believe. The method breaks down in practice because of man's social nature; we have to take account of contrary beliefs in others, so that the real problem is to fix the belief of the community; for otherwise our own belief is precariously exposed to attack and doubt. Hence the resort to the method of authority. This method breaks down in time by the fact that authority can not fix all beliefs in all their details, and because of the conflict which arises between organized traditions. There may then be recourse to what is "agreeable to reason" – a method potent in formation of taste and in esthetic productions and in the history of philosophy, – but a method which again fails to secure permanent agreements in society, and so leaves individual belief at the mercy of attack. Hence, finally, recourse to science, whose fundamental hypothesis is this: "There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and ... by taking advantage of the laws of perception, we can ascertain *by reasoning* how things really are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion."[6]

It will be noted that the quotation employs the terms "reality" and "truth," while it makes them a part of the statement of the *hypothesis* entertained in scientific procedure. Upon such a basis, what meanings attach to the terms "reality" and "truth"? Since they are general terms, their meanings must be determined on the basis of the effects, having practical bearings, which the object of our conception has. Now the effect which real things have is to cause

[5] *Popular Science Monthly,* Volume XII, pp. 1–15. It is much to be desired that the series of articles be printed in book form. Discussion since 1878 has caught up with Peirce, and his views would awaken much more response now than when published.

[6] *Ibid.,* p. 11.

beliefs; beliefs are then the consequences which give the general term reality a "rational purport." And on the assumption of the scientific method, the *distinguishing* character of the *real* object must be that it tends to produce a single universally accepted belief." All the followers of science are fully persuaded that the processes of investigation, if only pushed far enough, will give one certain solution to every question to which they can be applied." "This activity of thought by which we are carried, not where we wish, but to a foreordained goal, is like the operation of destiny.... This great law is embodied in the conception of truth and reality. The opinion which is fated to be ultimately agreed to by all *who investigate*, is what we mean by the truth, and the object represented in this opinion is the real."[7] In a subsequent essay (on the "Probability of Induction") Peirce expressly draws the conclusion which follows from this statement; viz., that this conception of truth and reality makes everything depend upon the character of the methods of inquiry and inference by which conclusions are reached. "In the case of synthetic inferences we know only the degree of trustworthiness of our proceeding. As all knowledge comes from synthetic inference, we must also infer that all human certainty consists merely in our knowing that the processes by which our knowledge has been derived are such as must generally have led to true conclusions"[8] – true conclusions, once more, being those which command the agreement of competent inquiries.

Summing up, we may say that Peirce's pragmaticism is a doctrine concerning the meaning, conception, or rational purport of objects, namely, that these consist in the "effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object."[9] "Our idea of anything is our idea of its sensible effects," and if we have any doubt as to whether we really believe the effects to be sensible or no, we have only to ask ourselves whether or no we should act any differently in their presence. In short our own responses to sensory stimuli are the ultimate, or testing, ingredients in our conception of an object. In the literal sense of the word pragmatist, therefore, Peirce is more of a pragmatist than James.

He is also less of a nominalist. That is to say, he emphasizes much less the *particular* sensible consequence, and much more the habit, the generic attitude of response, set up in consequence of experiences with a thing. In the passage in the Dictionary already quoted he speaks as if in his later life he attached less importance to action, and more to "concrete reasonableness" than in his earlier writing. It may well be that the relative emphasis had shifted. But there

[7] *Ibid.*, pp. 298–300, *passim.*

[8] *Ibid.*, p. 718.

[9] *Ibid.*, p. 293.

is at most but a difference of emphasis. For in his later doctrine,concrete rationality means a change in existence brought about *through* action, and through action which embodies conceptions whose own specific existence consists in habitual attitudes of response. In his earlier writing, the emphasis upon habits, as something generic, is explicit. "What a thing means is simply what habits it involves."[10] More elaborately, "Induction infers a rule. Now the belief of a rule is a habit. That a habit is a rule, active in us, is evident. That every belief is of the nature of a habit, in so far as it is of a general character, has been shown in the earlier papers of this series."[11]

The difference between Peirce and James which next strikes us is the greater emphasis placed by the former upon the method of procedure. As the quotations already made show, everything ultimately turned, for Peirce, upon the trustworthiness of the procedures of inquiry. Hence his high estimate of logic, as compared with James – at least James in his later days. Hence also his definite rejection of the appeal to the Will to Believe – under the form of what he calls the method of tenacity. Closely associated with this is the fact that Peirce has a more explicit dependence upon the social factor than has James. The appeal in Peirce is essentially to the consensus of those who have investigated, using methods which are capable of employment by all. It is the need for social agreement, and the fact that in its absence "the method of tenacity" will be exposed to disintegration from without, which finally forces upon mankind the wider and wider utilization of the scientific method.

Finally, both Peirce and James are realists. The reasonings of both depend upon the assumption of real things which really have effects or consequences. Of the two, Peirce makes clearer the fact that in philosophy at least we are dealing with the *conception* of reality, with reality as a term having rational purport, and hence with something whose meaning is itself to be determined in terms of consequences. That "reality" means the object of those beliefs which have, after prolonged and cooperative inquiry, become stable, and "truth" the quality of these beliefs is a logical consequence of this position. Thus while "we may define the real as that whose characters are independent of what anybody may think them to be ... it would be a great mistake to suppose that this definition makes the idea of reality perfectly clear."[12] For it is only the outcome of persistent and conjoint inquiry which enables us to give intelligible meaning in the concrete to the expression "characters independent of what anybody may think them to be." (This is the pragmatic way out of the egocentric predicament.) And while my purpose is wholly expository I can not close without inquiring whether recourse to Peirce would not have a most

[10] *Ibid.*, p. 292.

[11] *Popular Science Monthly,* Vol. XIII, p. 481.

[12] *Popular Science Monthly,* Vol. XII, P. 298.

beneficial influence in contemporary discussion. Do not a large part of our epistemological difficulties arise from an attempt to define the "real" as something given prior to reflective inquiry instead of as that which reflective inquiry is forced to reach and to which when it is reached belief can stably cling?

CHARLES S. PEIRCE AT THE JOHNS HOPKINS

Christine Ladd-Franklin. "Charles S. Peirce at the Johns Hopkins." *Journal of Philosophy, Psychology and Scientific Methods* 13.26 (21 December 1916): 715–722.

The keenest pleasure which can offer itself to the university student who is about to grapple with the profoundest thinking that the world has done and is doing is his when he finds himself by chance in the actual presence of one of the creators of the world's store of thought. This had been the happy lot of the students of the Johns Hopkins University from its opening days. They felt, with reason, that they were assisting at the foundation of an important new development in university life in this country. For the first time the atmosphere of the great European centers of research had been created in America. Departments headed by such men as Sylvester, Gildersleeve, Remsen, Rowland, Martin, a group of scholars all fitted to inspire their students with the ardor of research – this was something new. To this atmosphere the students of those early days, reinforced by enthusiastic young *docents* fresh from their experience of the then simple and ideal German university life, responded with due appreciation of the lucky days upon which they had fallen. Probably there has never been in this country a center of learning where the conditions were more ideal for producing in its best form the joy of the intellectual life – nor a group of students better fitted to profit by their novel opportunities. To share the life of this ardent body of workers was, they one and all felt, an experience to be remembered.

To this group of students, eager for intellectual adventure, came, in 1880–1881, Charles S. Peirce. His reputation had preceded him, and his hearers were quickly receptive to the inspiration to be had from one more master mind. Sylvester and Peirce both possessed recognized elements of the temperament of genius – a thing which adds much to the effectiveness of personal intercourse with a great man – but that temperament was exhibited in them in very different forms. Sylvester was as oblivious as Peirce of the presence of his audience (though he did once by chance discover, to his evident amazement, that his most distinguished auditor, Professor Cayley, was fast asleep, his bald head frankly covered with his handkerchief), but he had a boyish enthusiasm which was in full harmony with his fresh English color and his nervous Jewish temperament. He was always brimming over with the importance of his subject-matter, which

had usually been produced during the three days' interval between his lectures, and which was brought forth with the keen joy of the immediate discoverer. Peirce, on the contrary, was of the brooding type. He sat when he addressed his handful of students (who turned out afterwards, however, to be a not unimportant handful) and he had all the air, as has been noted by Professor Jastrow, of the typical philosopher who is engaged, at the moment, in bringing fresh truth by divination out of some inexhaustible well. He got his effect not by anything that could be called an inspiring personality, in the usual sense of the term, but rather by creating the impression that we had before us a profound, original, dispassionate and impassioned seeker of truth. No effort was made to create a connected and not inconsistent whole out of the matter of each lecture. In fact, so devious and unpredictable was his course that he once, to the delight of his students, proposed at the end of his lecture, that we should form (for greater freedom of discussion) a Metaphysical Club, though he had begun the lecture by defining metaphysics to be "the science of unclear thinking."

Several of Professor Sylvester's students – understanding that the New Logic which Professor Peirce professed had connections with existing mathematics and that, even if it had not, it was something which, unlike the mechanical logical exercises of the schools, was expected to have a vivifying and clarifying effect upon one's actual reasoning processes – joined his class in logic, composed otherwise, of course, of students of philosophy. This mixed character of the audience, as is too often the case in lectures on modern logic, made it impossible for the lecturer to adapt his subject-matter with exactness to the needs of either part. Peirce's lectures did not go very extensively into the details of his mathematical logic (Symbol Logic, I maintain, is the only proper name for it, and I note with pleasure that Dr. Karl Schmidt has adopted this term). His lectures on philosophical logic we should doubtless have followed to much greater advantage if he had recommended to us to read his masterly series of articles on the subject which had already appeared in the *Popular Science Monthly* in 1878 under the title "Some Illustrations of the Logic of Science." We should have had from these at first hand a better idea of "how to make our ideas clear" concerning the methods of science as he understood them. But that, in spite of his apparent aloofness and air of irresponsibility, he really had the interests of his hearers deeply at heart will appear from a sympathetic letter which he wrote me some years later, when I came to lecture myself on logic at the Johns Hopkins University:

MILFORD, PA.
Thanksgiving Day, 1902

My dear Mrs. Franklin: It gives me joy to learn that you are to lecture on logic at the Johns Hopkins. But, oh, you will not have such a wonderful and charming class as I had, especially the first year. In those days I knew very little about logic, and did not even thoroughly understand upon what logic is based.

I was not in possession of the proof that the science of logic must be based on the science of ethics, although I more or less perceived that sound reasoning depends more on sound morals than anything else. I at any rate tried hard to see what I was about, and not to build logic upon anything that must on the contrary be built upon it. In a certain measure I appreciated the precise nature of the utility of logic, and rated it high; but I did not know what I know now. I am finding out every day something new to me in logic.

I wish most earnestly that you may succeed in animating your students with the true spirit of science and of logic, and that is the very greatest happiness I could wish for you. Whether you do or not depends chiefly on how much you care to do so. – I return Keynes.

Very faithfully,

C. S. PEIRCE.

P. S. I hope that Schröder's manuscripts will be printed. I would do anything in my power to that end. Can't you find out what is needed?

The following letter, which I have quoted in part, indicates, among other things, the extreme value which Peirce attributed to his form of pragmatism. The important collection of his reprints which he presented to me at this time, I have now deposited in the library of Columbia University. This letter, too, is not so much a personal letter as it is a definitive setting out of some of his views and experiences; if he has left no complete autobiography, it should furnish important material concerning the wonderful intellectual life which he took part in, in Cambridge, during his early years.

My dear Mrs. Franklin: It is most kind of you to think of me and of doing what you propose, and it happens that, just at this time, it would be very serviceable to me. For in a forthcoming number of the *Monist*, I am to have an article about pragmatism, explaining what I conceive it to be. Although James calls himself a pragmatist, and no doubt he derived his ideas on the subject from me, yet there is a most essential difference between his pragmatism and mine. My point is that the meaning of a *concept* ... lies in the manner in which it could *conceivably* modify purposive action, and *in this alone*. James, on the contrary, whose natural turn of mind is away from generals, and who is besides so soaked in ultra-sensationalist psychology that like most modern psychologists he has almost lost the power of regarding matters from the logical point of view, in defining pragmatism, speaks of it as referring ideas to *experiences*, meaning evidently the sensational side of experience, while I regard *concepts* as affairs of habit or disposition, and of how we should react. Without particularly referring to him, my *Monist* article (already sent in and accepted) is to explain what my position is; and I desire to follow it up by two others, of which the first shall show how this

principle at once affords solutions of a great variety of problems, and shall show what the general color of those solutions is, while the third article shall show what facts and phenomena I appeal to as proving the truth of the pragmatist principle. But it is altogether problematical whether the second and third articles ever appear. It all depends upon whether the readers of the *Monist* are interested in the first article. Now if you were to write what you propose, it would call attention to the first article, increase the sales of that number of the *Monist*, and render the acceptance of a second much more likely. I have no fears but that the second should excite of itself sufficient interest to insure the third; but the first, being a definition of an individual opinion, is not calculated to attract new readers.

It is true that I have not received much credit either for pragmatism or any other part of my work. However, as it was not done for the sake of anything of that kind, I have no reason to complain. What I expected to gain when I did it, I have gained. I began on the scale of printing a logical research every month. My motive then was a mixed one. I wanted the statement of my results in print for my own convenience in referring to them, and I thought it would be a gain to civilization to have my entire logical system. But after a very few months, I found that nobody took any notice of my papers, and I lost all interest in their publication, and simply filed away my mss. for my own use.

It must have been about 1857 when I first made the acquaintance of Chauncey Wright, a mind about on the level of J. S. Mill. He was a thorough mathematician of the species that flourished at that time, when dynamics was regarded (in America) as the top of mathematics. He had a most penetrating intellect. There were a lot of superior men in Cambridge at that time. I doubt if they could have been matched in any other society as small that existed at that time anywhere in the world. Wright, whose acquaintance I made at the house of Mrs. Lowell, was at that time a thorough Hamiltonian; but soon after he turned and became a great admirer of Mill. He and I used to have long and very lively and *close* disputations lasting two or three hours daily for many years. In the sixties I started a little club called the Metaphysical Club. It seldom if ever had more than half a dozen present. Wright was the strongest member and probably I was next. Nicholas St. John Green was a marvelously strong intelligence. Then there were Frank Abbott, William James, and others. It was there that the name and the doctrine of pragmatism saw the light. There was in particular one paper of mine that was much admired and the ms. went around to different members who wished to go over it more closely than they could do in hearing it read. While I was in charge of the Coast Survey office in 1873, I employed some Sundays in putting that piece into a literary form, though without any intention of printing it. But in 1875 or 1876 I met old William Appleton, the publisher, on a steamer, and he offered me a good round price for some articles for the *Popular Science Monthly*. I patched up the piece I speak of for the first; and it appeared in November, 1877. In the autumn of 1877 I

went abroad in order to urge a certain truth upon the Geodetical Association. As I should have to speak in French and conduct a discussion in that language, by way of practise I began and finished on the voyage between Hoboken and Plymouth an article about pragmatism in French. I afterward translated into French my article of November, 1877, and these two appeared in the *Revue Philosophique*, about Volume VI. I left in the library of the J. H. University a bound volume of my pieces containing these two. I have not a copy of either now. I should say that the *word* pragmatism does not appear in that article, nor did I insert it in the *Century Dictionary* or ever use it in print previous to the article in Baldwin's Dictionary. I translated the steamer article into English and in that dress it appeared in the *Popular Science* of January, 1878, some time previous to the publication of the original text.

There never was the smallest disloyalty on James's part. On the contrary, he has dragged in mention of me whenever he could.

In the spring of 1903 I was invited, by the influence of James, Royce, and Münsterberg, to give a course of lectures in Harvard University on Pragmatism. I had intended to print them; but James said he could not understand them himself and could not recommend their being printed. I do not myself think there is any difficulty in understanding them, but all modern psychologists are so soaked with sensationalism that they can not understand anything that does not mean that, and mistranslate into the ideas of Wundt whatever one says about logic.... How can I, to whom nothing seems so thoroughly real as generals, and who regard Truth and Justice as *literally* the most powerful powers in the world, expect to be understood by the thoroughgoing Wundtian? But the curious thing is to see Absolute Idealists tainted with this disease, – or men who, like John Dewey, hover between Absolute Idealism and Sensationalism. Royce's opinions as developed in his *World and Individual* are extremely near to mine. His insistence on the element of purpose in intellectual concepts is essentially the pragmatistic position....

Pragmatism is one of the results of my study of the formal laws of signs, a study guided by mathematics and by the familiar facts of everyday experience and by no other science whatever. It is a maxim of logic from which issues a metaphysics very easily. It solves almost all problems of metaphysics in short metre and it solves them in such a way as never to bar the way of any positive inquiry. It also has the gratifying effect of encouraging the simplest ideas of religion and anthropomorphie conceptions of the Absolute.

I have some of my quarto papers bound up together and I am sending you this volume begging your acceptance of it. I wish I had copies of some of my octavo papers bound up; but I have not. I have some loose copies of some of them which I would have bound for you; but one never knows when a binder is going to send one's books home. One only knows that he will try to do so in time to get the bill paid before both parties die. So I send such papers as I can find, as they are, along with a few newspapers containing articles on

"French Academy," "Napoleon Bonaparte," "Great Men of the Nineteenth Century," etc.

With best regards to Mr. Franklin,
Very faithfully,
C. S. PEIRCE.

Professor Peirce had a mind of great originality and productiveness; he lacked, no doubt, as do too many geniuses, that keen self-criticism which would have enabled him to distinguish rigidly, in what he produced, between the wheat and the chaff. Much of what he wrote, especially during the later years of his life, was incomprehensible beyond even the privilege of the maker of new philosophies; articles in the *Monist* which William James has said will be a rich mine for the future student will just as probably remain forever indecipherable by him. Once when I was in search of an article of his which had lately appeared in the *Monist*, entitled, in Shakespeare's phrase, "Man's Glassy Essence," and could not remember its name, the young librarian who assisted me said, "Oh yes, – you mean the article on 'Glacial Man'" – a title which would doubtless have served as well as the other. Indeed, many of his contributions to the philosophical dictionary were of the purely cabalistic type. The second part of the article on Symbolic Logic, for instance, was finally, against the urgent advice of Professor Couturat, who had himself contributed the admirable first part, sent to the printer, though it is doubtful if any one will ever be able to read it.[1] But it will never be known what reams of closely written matter were excluded! Professor Peirce had already completed a great part of a book on logic, largely medieval logic, which (save for what came out in the Dictionary) he was never in a position to publish: his future disciples will no doubt see to it that this great work is eventually given to the press. So difficult at the time, however, was the rejection, in the interest of sanity, of such a mass of closely written pages that at last I found it necessary to call in the aid of my husband, who undertook to play the traditionally unpleasant rôle of the candid friend. The ingrained sweetness of Peirce's character – an essential to the acceptance of irksome criticism – is here brought into evidence; in fact, this bit of correspondence may perhaps be regarded as a model of its type, – no easy type.

[MILFORD, PA., NOV., 1900.]
My dear Mrs. Franklin:

I want you kindly to read the enclosed article Exact Logic and show it to your husband whose judgment I have much faith in, if he will be so good as to look at it. I told Prof. Baldwin when I took up this work that I should

[1] The death of Professor Couturat, who was run over by a military autotruck at the beginning of the war, is one of the many irreparable losses of the European war.

expect "unlimited swing" in exact logic. Still, I don't know but it is too much to ask him to print this; and I don't want to ask what is not right. The purpose of it is to put Exact Logic in its place as a branch of philosophy. It is an extremely careful statement of the small ground it covers. I do not see how I could say less without reducing it to a general statement that would be without force. I am too close to it to get a good mental sight at it. I request you to read it and tell me plainly whether it seems to you and your husband calculated to do the cause of exact logic any good, ... also whether there are any modifications you can suggest, especially to shorten it. A short vocabulary of terms omitted in Vol. I of the Dictionary will have to be added. You had better, I should think, follow my example in this respect in your articles, inserting, for instance, ... I should not wonder, if you look into my Virgo symbol, but you might find it resulted in a valuable rule of elimination.

Very faithfully,

C. S. PEIRCE.

My dear Mr. Peirce,

... I feel bound to say that, according to my notion of such a work – one, to be sure, very commonplace in comparison with that which you entertain – an article in a cooperative dictionary such as this should not be devoted to pioneer work, however eminent the writer of it, but to the exposition of what is either fairly well established and current or, if not, is capable of being so expressed within the necessary limits as to be intelligible to the ordinary properly-equipped reader. Now, the views which you lay down in your article seem to me absolutely to require for their adequately intelligible presentation far more space than you have given to them, and, *a fortiori*, far more space than the dictionary can spare....

Very faithfully yours,

F. FRANKLIN.

MILFORD, PA., 1900, NOV.

My dear Franklin:

Your letter is at hand. I asked of you a disagreeable thing, and I thank you for having done it so faithfully. Would there were more courage between friends! You give me wholesome counsel, and I shall follow it, notwithstanding the suggestions of the Evil One.

Yours faithfully,

C. S. PEIRCE.

This same advice, might, I have no doubt, have been repeated to advantage under later letters of the alphabet.

If Charles S. Peirce had happened to have a longer period of activity at the Johns Hopkins University – if the years had not been cut off during which he

was kept upon the solid ground of intelligible reason by discussions with a constantly growing group of level-minded students, – there is no doubt that his work would have been of more certain value than it can be affirmed to be now; it is probable, for instance, that his grateful pupil, William James, would not have found his generously provided for Lowell lectures too incomprehensible to be printed at the time. At the meetings of the Philosophical Congresse in Göttingen, in 1908, Peirce had two warm defenders of his views, as against the James form of pragmatism, in the Italian philosophers, Calderoni and Vailati. Vailati, a man of most acute intellect, is no longer living; Calderoni would no doubt be able to throw much illumination – more perhaps than any other living writer – upon the real bearing of the philosophical views of Mr. Peirce.

CHARLES S. PEIRCE AS A TEACHER

Joseph Jastrow. "Charles S. Peirce as a Teacher." *Journal of Philosophy, Psychology and Scientific Methods* 13.26 (21 December 1916): 723–726.

To record an impression of Charles S. Peirce as a teacher is a grateful opportunity. A deep conviction of the significance of the problems presented and a mastery of the intellectual processes were his sole and adequate pedagogical equipment. The logical quality was the dominant trait of his thinking; rectitude became a rational virtue. In the deductive field where premises were sharply defined and under control, the orderly development of conclusions was the true function of the well-trained mind, and the mark of the scholar. The "Algebra of Logic" was an expert tool usable only by the expert and extending the scope of the logical grasp. Deeply mathematical, his thinking had not the trace of a scholastic quality; there was no love of the tool for its own sake, but an admiration of its cutting edge as the issue of human care and skill. His interests were comprehensive, though not scattered. In the field of inductive problems the fertility of his resources imparted a breadth to his treatment that brought to the student the constant leadership of a rich mind. His knowledge never gave the impression of a burden, but of strength. His command of the history of science was encyclopedic in the best sense of the word. The hypotheses of the great thinkers of the past were transformed into logical exercises for the present-day student. The great advances of science were due as much (if not more) to an increased hold over the logical instrument as to an enlarged realm of observation. The history of science was a record of man's growth in logical stature. In dealing with the more fluid and versatile considerations of induction, as in the more rigid and closed systems of deductive reasoning, the skilled focusing of his mind excited admiration. The irrelevant was discarded, the significant composition revealed. The chips fell away and the statue in the block appeared. This sense of masterly analysis accomplished with neatness and dispatch, – all seemingly easy, but actually the quality of the highest type of keen thinking – remains as the central impression of a lecture by Professor Peirce.

When I came to the Johns Hopkins University in the autumn of 1882, Mr. Peirce's career was well established. He had inspired a remarkable group of young men, now leaders in intellectual affairs; a group to which is to be added the name of Christine Ladd-Franklin, whose exceptional abilities secured for her exceptional privileges. The *Studies in Logic* by "Members of the Johns

Hopkins University" appeared in 1883. The concluding paper which Mr. Peirce contributed to the volume on "A Theory of Probable Inference" exhibits the qualities of his teaching and the charm and lucidity of his language, and remains an admirable example of the construction of his thought and the finish of his art. I refer to it because it reflects the interplay of logical and psychological trends, which he developed as a fertile principle of interpretation. Logic was an emanation of habit; the trend was biological, the product required the schooling of discipline and the inspiration of genius. It was this side of his teaching that gave the humanistic value; out of it grew the insight that made him the father of pragmatism. The doctrine had a distinct pedagogical value; it made the student feel the reality of the discussions by adding a moderate insight to a growing capacity. "In point of fact a syllogism in Barbara virtually takes place when we irritate the foot of a decapitated frog." After developing the idea, he concludes: "Although these analogies, like all very broad generalizations, may seem very fanciful at first sight, yet the more the reader reflects upon them, the more profoundly true I am confident they will appear. They give a significance to the ancient system of formal logic which no other can at all share."

My predilections at that formative period were, I must confess, rather negative. My college course had left me with a series of dislikes, not violent, but distinctive. By elimination I enrolled as a student in philosophy. Mr. Peirce's courses in logic gave me my first real experience of intellectual muscle. Though I promptly took to the laboratory of psychology when that was established by Stanley Hall, it was Peirce who gave me my first training in the handling of a psychological problem, and at the same time stimulated my self-esteem by entrusting me, then fairly innocent of any laboratory habits, with a real bit of research. He borrowed the apparatus for me, which I took to my room, installed at my window, and with which, when conditions of illumination were right, I took the observations. The results were published over our joint names in the *Proceedings of the National Academy of Science*. The demonstration that traces of sensory effect too slight to make any registry in consciousness could none the less influence judgment, may itself have been a persistent motive that induced me years later to undertake a book on "The Subconscious."

As a further illustration of his fertile suggestiveness and use of cooperative stimulus I mention his study of great men. He prepared an elaborate question-sheet regarding the ancestry, qualities of mind and body, mode of work, stages of growth, etc., of the great men of all times. He invited a small group of students to join him in reading the chief biographies of great men and extracting the data that might furnish the entries for the syllabus. We then held conferences for the discussion and tabulation of the results. The project was never completed. A number of years later, I was permitted to formulate two rather simple conclusions, the one relating to "Longevity," the other to

"Precocity." This was done at a time when such studies were not general, though Galton's work was known. Such a conclusion as that later associated with Dr. Osler's misquoted verdict regarding the correlation of early manhood with germinal ideas, was anticipated in this study. Such were his methods.

Mr. Peirce's personality was affected by a superficial reticence often associated with the scientific temperament. He readily gave the impression of being unsocial, possibly cold, more truly retiring. At bottom the trait was in the nature of a refined shyness, an embarrassment in the presence of the small talk and introductory salutations intruded by convention to start one's mind. His nature was generously hospitable; he was an intellectual host. In that respect he was eminently fitted to become the leader of a select band of disciples. Under more fortunate circumstances, his academic usefulness might have been vastly extended. For he had the pedagogic gift to an unusual degree, had it by dower of nature, as some men handle a pencil and others the bow of a violin. It may be an inevitable result of the conventional system of education, but it is none the less a sad one, that his type of ability does not flourish readily in an institutionalized atmosphere; and no university had a more wholesome atmosphere than had Johns Hopkins in those days. The moral, if there be one, is that systems must give way to personalities, if the best talents of the best men are to be available.

The young men in my group who were admitted to his circle found him a most agreeable companion. The terms of equality upon which he met us were not in the way of flattery, for they were too spontaneous and sincere. We were members of his "scientific" fraternity; greetings were brief, and we proceeded to the business that brought us together, in which he and we found more pleasure than in anything else. This type of cooperation and delegation of responsibility came as near to a pedagogical device as any method that he used. One instance of it stands out with embarrassing clearness. To my consternation I was informed by Mr. Peirce that he would be absent at the time of the next lecture in logic, and that he would like me to present the next stage in the development of his topic to the class of graduate students. About half the hour was over, when Mr. Peirce walked in, took his place and insisted upon my concluding the exercise. I know of no more enlightening comment upon the atmosphere of the place and the day than that the procedure was accepted naturally by all concerned except myself.

It should be mentioned that during these years Mr. Peirce was continuing his work in the Geodetic Survey and was thus carrying on a considerable range of scientific work of quite different scope. He came of a family of exact scientific men with academic traditions. It needed no change of manner or interest to set his activities in the professorial direction. By those who knew him in other relations I am confirmed in my impression that he had more pleasure in the academic pursuits. To these he turned when he retired, recognizing in his work as a scholar surveying broadly the field of intellect, the

strongest bent of his versatile mind. To those who believe that for the training of the leaders of men, nothing is more inspiring and more helpful than training by example – than the privilege of association in the cooperative spirit with a master mind – the example of Charles S. Peirce will continue to remain a cherished memory. An educational policy that makes it possible to find a place for such men as Peirce in the faculties of the great universities is a worthy ambition for those who control the educational future of America.

CHARLES S. PEIRCE

Morris R. Cohen. "Charles S. Peirce and a Tentative Bibliography of His Published Writings." *Journal of Philosophy, Psychology and Scientific Methods* 13.26 (21 December 1916): 726–733, omitting the outdated bibliography on pp. 733–739.

Though I have not stood in any peculiar relation to Charles S. Peirce, and can not speak authoritatively on the various phases of his extraordinarily diversified intellectual activity, I can not refuse the editors' courteous invitation to add a few words of "philosophic piety" in tribute to one of the few great seminal minds that America has produced.

Many and diverse are the minds that form the philosophic community. There are, first and foremost, the great masters, the system builders who rear their stately palaces towering to the moon. These architectonic minds are served by a varied host of followers and auxiliaries. Some provide the furnishings to make these mystic mansions of the mind more commodious, while others are engaged in making their façades more imposing. Some are busy strengthening weak places or building much-needed additions, while many more are engaged in defending these structures against the impetuous army of critics who are ever eager and ready to pounce down upon and destroy all that is new or bears the mortal mark of human imperfection. There are also the philologists, those who are in a more narrow sense scholars, who dig not only for facts or roots, but also for the stones which may serve either for building or as weapons of destruction. Remote from all these, however, are the intellectual rovers who, in their search for new fields, venture into the thick jungle that surrounds the little patch of cultivated science. They are not gregarious creatures, these lonely pioneers; and in their isolation they often completely lose touch with those who tread only the beaten paths, so that no one learns of their green pastures or knows their final burial ground. Those that return to the community often speak of strange things or use strange words; and it is but seldom that they arouse sufficient faith for others to follow them and change their trails into high roads.

Few nowadays would question the great value of these pioneer minds; and it is often asserted that universities are established to facilitate their work, and prevent it from being lost. But universities, like other well-managed institutions, can find place only for those who can work well in harness. The restless, impatient minds, like the socially or conventionally unacceptable,

must thus be kept out, no matter how fruitful their originality. Charles S. Peirce was certainly one of these restless pioneer souls with the divine gift of seeing the hitherto invisible. In his early papers, in the *Journal of Speculative Philosophy*, and in his later papers, in the *Monist*, we get indeed glimpses of a vast philosophic system on which he was working with an unusual wealth of material and apparatus. He had, indeed, one of the most essential gifts of successful system builders, the power to coin an apt and striking terminology. But I am not certain that he could ever have completed this work, *i.e.*, I can not in my own imagination see how the various lines of his thought can be made to meet. However, that his was a mind unusually fruitful in strikingly original suggestions, no careful, open-minded reader of his writings will deny. That these writings have been so sadly neglected – that even now no collected edition of them is available – is to be accounted for only by the fact that isolation and neglect are the penalty for those who stray from the beaten path and refuse to bow to the reigning idols.

In one respect Peirce has certainly been most fortunate. Two such gifted and powerful minds as those of William James and Josiah Royce have been able to follow some of the directions from his Pisgah heights and have thus conquered rich philosophic domains. That further domains await those who can decipher other of his cryptic directions can, of course, only be a question of faith.

Of Royce's indebtedness to Peirce an eloquent testimony is contained in the preface to the *Problem of Christianity*. In view, however, of Professor Howison's misunderstanding of that passage and its motive,[1] a student of Professor Royce may be allowed to testify to the frequency and generosity with which Professor Royce has, in his lectures and seminars, referred to the doctrines of Peirce. Besides, did not Professor Royce already indicate his indebtedness to Peirce in the preface to the *World and the Individual*, in 1899? Any one who reads Peirce's essay on the "Law of Mind"[2] can see for himself something of the stimulus which led Royce to the utilization of modern mathematical researches in the service of idealistic philosophy. Royce's doctrines of social consciousness, of the mind of the community, and of the process of interpretation are strikingly anticipated in some of Peirce's earlier and later writings. Some of these resemblances may be due to the fact that both Peirce and Royce were close students of the frequently mentioned, but seldom read works of Schelling. But in some cases, as, *e.g.*, in the doctrine concerning the nature of mathematical reasoning and its objects, Royce follows Peirce very closely.

[1] *Philosophical Review*, May, 1916, p. 240.

[2] *Monist*, Vol. II, pp. 537 ff.

James's indebtedness to Peirce in regard to pragmatism has now become widely known. But attention should be called to the fact that James was no less indebted to Peirce in regard to his radical empiricism. It was the intellectual companionship of Chauncey Wright and Charles S. Peirce that during his formative period steeled James against the transcendentalism which dominated the Cambridge of that day.[3] Wright's influence was mainly in the direction of the old empiricism of Mill and Bain which led James to Spencer's "Psychology." The unquestioning belief in eternal unalterable laws of nature, that everything that happens happens precisely in accordance with these laws, was one of the main tenets of that empiricism. For the distinctive note of his radical empiricism, the opposition to the "block universe" and the belief that the whole world is changing and growing, James was indebted to Peirce as well as to Renouvier and Boutroux.

One of our American many-volumed sources of infallible information dismisses Peirce briefly and simply as a physicist. This is perfectly true as far as it goes. For many years Peirce worked on the problems of geodesy and his contributions to the subject, notably his researches on the pendulum, were at once recognized by European investigators in this field. The International Geodetic Congress, to which he was the first American representative, gave unusual attention to his paper, and men like Cellerier and Plantamour acknowledged their obligation to him.[4] This and other scientific work involving fine measurement, with the correlative investigations into the theory of probable error, seem to have been a decisive influence in the development of Peirce's tychistic philosophy. Philosophers inexperienced in actual scientific measurement may naively accept as absolute truth such statements as "every particle of matter attracts every other particle directly as the product of their masses and inversely as the square of the distance," or "when hydrogen and oxygen combine to form water the ratio of their weights is 1:8." But to those who are actually engaged in measuring natural phenomena with instruments of precision, nature shows no such absolute constancy or simplicity. As every laboratory worker knows, no two observers, and no one observer in successive experiments, get absolutely identical results. To the men of the heroic period of science this was no difficulty. They held unquestioningly the Platonic faith that nature was created on simple geometric lines, and all the minute variations were attributable to the fault of the observer or the crudity of his instruments. This heroic faith was, and still is, a most powerful stimulus to scientific research. But few would defend it to-day in its explicit form, and there is little empirical evidence to show that while the observer and

[3] See preface to James's *Psychology*, and dedication to his "Will to Believe."

[4] See Plantamour's "Recherches Expérimentales sur le mouvement simultané d'un pendule et de ses supports," Geneva, 1878, pp. 3–4.

his instruments are always varying, the objects which he measures never deviate in the slightest from the simple law. Doubtless, as one becomes more expert in the manipulation of physical instruments, there is a noticeable diminution of the range of the personal "error," but no amount of skill and no refinement of our instruments have ever succeeded in eliminating irregular, though small, variations. "Try to verify any law of nature and you will find that the more precise your observations, the more certain they will be to show irregular departure from the law."[5] There is certainly nothing in our empirical information to prevent us from saying that all the so-called constants of nature are merely instances of variation between limits so near to each other that their difference may be neglected for certain purposes. Moreover, the approach to constancy is observed only in mass phenomena, when we are dealing with very large number of particles; but social statistics also approach constant ratios when the numbers are very large. Hence, without denying discrepancies due solely to errors of observation, Peirce has certainly ground for his contention that "we must suppose far more minute discrepancies to exist owing to the imperfect cogency of the law itself, to a certain swerving of the facts from any definite formula."[6]

To this belief in absolute chance variations, Peirce joined the doctrine that the limiting ratios which we call the laws of nature are themselves slowly changing in the course of time. According to Peirce's grandiose conception, the very tendency towards law or regularity is itself the result of an accidental variation which has grown habitual with things. A good deal of his speculation in this field sounds mythologic, yet it is inherently as probable as the mechanical mythology according to which all spontaneity and novelty in nature are a delusion. By denying that the whole world can grow or increase in being, the mechanical philosophy must deny all the seeming increase in the diversity and specificity of things, since all that really is must have been from the beginning; and we are thus led to the position of Maxwell that the fundamental atoms out of which all things are made, are to-day precisely what they were in the day of their creation.[7]

The following,[8] published in 1868, is certainly in the spirit which leads to radical empiricism. "We can not begin with complete doubt. We must begin with all the prejudices which we actually have. These prejudices are not to be dispelled by a maxim, for they are things which it does not occur to us can be questioned.... A person may, it is true, in the course of his studies find

[5] *Monist*, Vol. II, p. 329.

[6] *Monist*, Vol. I, p. 165.

[7] Maxwell, in the conclusion to his text-book on "Heat."

[8] *Journal of Speculative Philosophy*, Vol. II, pp. 140–141.

reason to doubt what he began by believing; but in that case he doubts because he has a positive reason for it, and not on account of the Cartesian Maxim."

"Philosophy ought to imitate the successful sciences in its methods, so far as to proceed only from tangible premises which can be subjected to careful scrutiny, and to trust rather to the multitude and variety of its arguments than to the conclusiveness of any one. Its reasoning should not form a chain ... but a cable."

James certainly shared Peirce's individualistic belief that at least in the early stages of any inquiry or branch of science "independence of thought is the wholesome attitude, and gregarious thought is really sure to be wrong"; and he undoubtedly subscribed to Peirce's attitude toward that outer thoroughness characteristic of the Germans and their admirers: "These men write the larger number of those books which are so thorough and solid that every serious inquirer feels that he is obliged to read them; and his time is so engrossed by their perusal that his mind has not the leisure to digest their ideas and to reject them."[9]

In his "Pluralistic Universe," William James has called attention to the similarity between the tychistic-agapism of Peirce and the creative evolution of Bergson. But while both tend to restore life and growth to the nature of things,[10] Peirce's approach has marked logical advantages. Bergson relies heavily on certain details not very accurately reported, as, *e.g.*, the supposed identity of the vertebrate eye and the eye of the scallop or pecten, which ignores the fact that similarities of this kind may be readily explained by the mechanical principles of convergent evolution. Peirce relies more on the general logic of specificity and individuality, into which the facts adduced by Driesch may well fit, but which have a much wider appeal since they are also applicable to the facts of inorganic nature, and can not be refuted by considerations drawn from experimental biology.

A closer similarity seems to me to exist between the tychism of Peirce and the probabilism of Cournot. Both vigorously opposed that blind anancism or mechanical necessity which has become the sacred cow of scientific orthodoxy, at the same time that they extended the range of our scientific knowledge. Both also relied on the method of infinitesimals, not in the obscurantist way which forms the basis of the general distrust of that concept, but in a way to keep the respect of a mathematician like Poincaré.[11] Cournot's

[9] *Monist*, Vol. VII, p. 20.

[10] Both Peirce and Bergson believe that on other than practical subjects natural selection need not favor our attaining truth. – *Popular Science Monthly*, Vol. XII, p. 3.

[11] *Revue de Métaphysique et de Morale*, Vol. XIII, p. 293.

massive books give the impression of a more delicate and finished mind, possessed also of a greater power of organizing his material which comes with self-mastery, but Peirce appears to me decidedly the more unconventional and the more fruitful of original insight. Peirce also had a vastly greater and more intimate knowledge of factual details, both of the history of human thought and of logical mathematical and physical methods. He knew enough of medieval logical terminology to make corrections in a work as erudite as Prantl's logic; and whenever he refers to writers like Aristotle or Kant his analyses show thorough mastery.[12] The same is true (so far as I can follow him) of his references to modern mathematical, astronomical, physical, and chemical researches. Yet his own original contributions entitle him to be regarded as one of the founders of modern symbolic logic.[13] Cournot has made more substantial contributions to the theory of history and of economics. But we gather from Peirce's chance remarks, such as his characterization of the Mugwump,[14] or of that which produces dominant opinion among professors,[15] that his eye for social facts was not undeveloped. At a time when it was considered a sign of scientific election or grace to regard all social changes as due to an immanent dialectic force, he saw clearly that the changes of social institutions and ideas depend on the change of conditions which facilitates the breaking up of habits. His keen psychologic insight is shown perhaps at its best in his attack on the now classical tradition that makes the process of thought consist of a succession of images.[16]

Recent neo-realism will find many points of contact with Peirce's vigorous anti-nominalism, and his equally vigorous opposition to the modern tendency to regard logic as a part of psychology. To the view that the laws of logic represent "the necessities of thought," that propositions are true because "we can not help thinking so," he answers: "Exact logic will say that *C*'s following logically from *A* is a state of things which no impotence of thought alone can bring about."[17] "The question of validity is purely one of fact and not of thinking. … It is not in the least the question whether, when the premises are accepted by the mind, we feel an impulse to accept the conclusion also. The

[12] See, *e.g.*, his reference to Kant's "Transcendental Esthetic," *Journal of Speculative Philosophy*, Vol. II, p. 107.

[13] Schröder, *Algebra der Logik*, Vol. I, pp. 107 ff. Russell, *Principles of Mathematics*, pp. 23, 376.

[14] *Monist*, Vol. II, p. 552.

[15] *Ibid.*, Vol. VII, p. 20.

[16] *Journal of Speculative Philosophy*, Vol. II, pp. 152–154.

[17] *Monist*, Vol. VII, p. 27. *Cf. Journal of Speculative Philosophy*, Vol. II, p. 207; *Popular Science Monthly*, Vol. LVIII, pp. 305–306.

true conclusion would remain true if we had no impulse to accept it, and the false one would remain false though we could not resist the tendency to believe in it."[18]

Since the days of Locke modern philosophy has been almost entirely dominated by the assumption that one must study the process of knowing before one can find out the nature of things known; in other words, that psychology is *the* central philosophic science. The result of this has been an almost complete identification of philosophy with mental science. Nor did the influence of biologic studies of the middle of the nineteenth century shake the belief in that banal dictum of philosophic mediocrity: "The proper study of mankind is man." The recent renaissance of logical studies, and the remarkable progress of physics in our own day bid fair to remind us that while the Lockian way has brought some gains to philosophy, the more ancient way of philosophy is by no means exhausted of promise; nor has man lost his interest in the great cosmic play. Those who have faith in the ancient and fruitful approach to philosophy through the doors of mathematics and physics will find the writings of Charles S. Peirce full of suggestions. That such an approach can also throw light on the vexed problem of knowledge needs no assurance to those acquainted with Plato and Aristotle. But I may conclude by referring to Peirce's doctrine of ideal as opposed to sensible experiment, and to his treatment of the question how it is that in spite of an infinity of possible hypotheses man manages to make so many successful inductions.[19]

[18] *Popular Science Monthly*, Vol. XII, p. 3.

[19] *Monist*, Vol. VII, p. 206; *Popular Science Monthly*, Vol. XIII, pp. 213 ff, and his essay in *Studies in Logic*, pp. 175 ff.

Section Three

Evaluations of Peirce's Pragmatism, 1920–1940

C. S. PEIRCE

Ogden, C. K. and I. A. Richards. "C. S. Peirce." *The Meaning of Meaning* (London: Routledge and Kegan Paul, 1923), Appendix D, Section 6, pp. 279–290.

By far the most elaborate and determined attempt to give an account of signs and their meaning is that of the American logician C. S. Peirce, from whom William James took the idea and the term Pragmatism, and whose Algebra of Dyadic Relations was developed by Schroeder. Unfortunately his terminology was so formidable that few have been willing to devote time to its mastery, and the work was never completed. "I am now working desperately to get written before I die a book on Logic that shall attract some minds through whom I may do some real good," he wrote to Lady Welby in December, 1908, and by the kindness of Sir Charles Welby such portions of the correspondence as serve to throw light on his published articles on Signs are here reproduced.

In a paper dated 1867, May 14th *(Proc. Am. Acad. Arts & Sci.* (Boston) VII (1868), 295), Peirce defined logic as the doctrine of the formal conditions of the truth of symbols; *i.e.*, of the reference of symbols to their objects. Later, when he "recognised that science consists in inquiry not in 'doctrine' – the history of words, not their etymology, being the key to their meanings, especially with a word so saturated with the idea of progress as science," he came to realise, as he wrote in 1908, that for a long time those who devoted themselves to discussing "the general reference of symbols to their objects would be obliged to make researches into the references to their interpretants, too, as well as into other characters of symbols, and not of symbols alone but of all sorts of signs. So that for the present, the man who makes researches into the reference of symbols to their objects will be forced to make original studies into all branches of the general theory of signs." This theory he called Semeiotic, and its essentials are developed in an article in the *Monist*, 1906, under the title, "Prolegomena to an Apology for Pragmaticism."

A sign, it is there stated, "has an *Object* and an *Interpretant*, the latter being that which the Sign produces in the Quasi-mind that is the Interpreter by determining the latter to a feeling, to an exertion, or to a Sign, which determination is the Interpretant. But it remains to point out that there are usually two Objects, and more than two Interpretants. Namely, we have to distinguish the *Immediate Object*, which is the object as the Sign itself represents

it, and whose Being is thus dependent upon the Representation of it in the sign, from the *Dynamical Object*, which is the Reality which by some means contrives to determine the Sign to its Representation. In regard to the Interpretant we have equally to distinguish in the first place, the *Immediate Interpretant*, which is the interpretant as it is revealed in the right understanding of the Sign itself, and is ordinarily called the 'meaning' of the sign; while, in the second place, we have to take note of the *Dynamical Interpretant*, which is the actual effect which the Sign, as a Sign, really determines. Finally, there is what I provisionally term the *Final Interpretant*, which refers to the manner in which the Sign tends to represent itself to be related to its Object. I confess that my own conception of this third interpretant is not yet quite free from mist."

Reference is then made to the "ten divisions of signs which have seemed to me to call for my special study. Six turn on the characters of the Interpretant and three on the characters of the Object. Thus the division into Icons, Indices, and Symbols depends upon the different possible relations of a Sign to its Dynamical Object." Only one division is concerned with the nature of the Sign itself, and to this he proceeds as follows: –

> "A common mode of estimating the amount of matter in a MS. or printed book is to count the number of words. There will ordinarily be about twenty 'thes' on a page, and, of course, they count as twenty words. In another sense of the word 'word', however, there is but one word 'the' in the English language; and it is impossible that this word should lie visibly on a page, or be heard in any voice, for the reason that it is not a Single thing or Single event. It does not exist; it only determines things that do exist. Such a definitely significant Form, I propose to term a Type. A Single event which happens once and whose identity is limited to that one happening, or a Single Object of a thing which is in some single place at any one instant of time, such an event being significant only as occurring when and where it does, such as this or that word on a single line of a single page of a single copy of a book, I will venture to call a Token. An indefinite significant character such as the tone of voice, can neither be called a Type nor a Token. I propose to call a Sign a Tone. In order that a Type may be used, it has to be embodied in a Token which shall be a sign of the Type, and thereby of the object the Type signifies. I propose to call such a Token of a Type an Instance of the Type. Thus there may be twenty Instances of the Type 'the' on a page."

The special interest to Peirce of the distinctions thus christened was their application in explaining and developing a system of 'Existential Graphs', whereby diagrams are furnished "upon which to experiment, in the solution of the most difficult problems of logic." A diagram, he notes, "though it will

ordinarily have Symbolide features, is in the main an Icon of the forms of relations in the constitution of its Object." And in the same terminology it could be said that the footprint which Crusoe found in the sand "was an Index to him of some creature, while as a Symbol it called up the idea of a man." In the material here reproduced we are not concerned with the special applications which its author made of his theory, but in view of his constant insistence on the logical nature of his inquiry and his desire to avoid psychology, a further trichotomy[1] of general interest may here be mentioned. *Logic* he defined in an article in the *Monist* (Vol. VII., 1896–7, p. 25) as dealing with the problem, "to what conditions an assertion must conform in order that it may correspond to the 'reality'"; *Speculative Grammar* was the name given also by Duns Scotus to "the study of properties of beliefs which belong to them as beliefs"; and thirdly, "the study of those general conditions under which a problem presents itself for solution, and then under which one question leads on to another," appears as *Universal Rhetoric*. In writing to Lady Welby, he remarks that 'Significs', the term which she used for the study of Meaning, "would appear from its name to be that part of Semeiotic which inquires into the relation of Signs to the Interpretants (for which, as limited to Symbols, I proposed in 1867 the name Universal Rhetoric)." He strongly urges her to make a scientific study of Semeiotic, as well as of his Graphs ("I wish you would study my Existential Graphs; for in my opinion it quite wonderfully opens up the true nature and method of logical analysis – that is to say, of definition; though how it does so is not easy to make out, until I shall have written my exposition of that art"); and in a letter written in 1904, shortly before the publication of his chief *Monist* article, he deals with the classification of Signs at some length.

He prefaces his remarks by insisting that "a sign has *two Objects*, its object as it is represented and its object in itself. It has also *three Interpretants*, its interpretant as represented or meant to be understood, its interpretant as it is produced, and its interpretant in itself." Signs may be divided as to their own material nature, as to their relations to their objects, and as to their relations to their interpretants.

> "As it is in itself a sign is either of the nature of an appearance, when I call it a *qualisign*; or secondly, it is an individual object or event, when I may call it a *sinsign* (the syllable sin being the first syllable of Semel, simul, singular, etc.); or thirdly, it is of the nature of a general type, which I call a *legisign*. As we use the term 'word' in most cases, saying that 'the' is one 'word' and 'an' is a second 'word', 'word' is a legisign. But when we

[1] "They seem all to be trichotomies which form an attribute to the essentially triadic nature of the sign."

> say of a page in a book that it has 250 'words' upon it, of which twenty are 'the's', the 'word' is a sinsign. A sinsign so embodying a legisign, I term a *replica* of the legisign. The difference between a legisign and a qualisign, neither of which is an individual thing, is that a legisign has a definite identity, though usually admitting a great variety of appearances. Thus &, *and*, and the sound are all one word. The qualisign, on the other hand, has no identity. It is the mere quality of an appearance, and is not exactly the same throughout a second. Instead of identity it has great similarity, and cannot differ much without being called quite a different qualisign."

With regard to the other main divisions of signs he explains that "in respect to their relations to their dynamic objects, I divide signs into *Icons*, *Indices* and *Symbols* (a division I gave in 1867). I define an *Icon* as a sign which is determined by its dynamic object by virtue of its own internal nature. Such is any qualisign like a vision, or the sentiment excited by a piece of music considered as representing what the composer intended. Such may be a sinsign like an individual diagram; say a curve of the distribution of errors. I define an *Index* as a sign determined by its dynamic object by virtue of being in a real relation to it. Such is a Proper Name (a legisign), such is the occurrence of a symptom of a disease (the symptom itself is a legisign, a general type of a different character. The occurrence in a particular case is a sinsign). I define a *Symbol* as a sign which is determined by its dynamic object only in the sense that it will be so interpreted. It thus depends either upon a convention, a habit[2] or a natural disposition of its interpretant or of the field of its interpretant (that of which the interpretant is a determination). Every symbol is necessarily a legisign; for it is inaccurate to call a replica of a legisign a symbol."

In respect of its immediate object a sign may either be a sign of quality, of an existent or of a law; while in regard to its relation to its signified interpretant, it is said to be either a *Rheme*, a *Dicent*, or an *Argument*. "This corresponds to the old division Term, Proposition, and Argument, modified so as to be applicable to signs generally. A Term is simply a class-name or Proper-name. I do not regard the common noun as an essentially necessary part of speech. Indeed, it is only fully developed as a separate part of speech in the Aryan languages and the Basque – possibly in some other out of the way tongues. In the Semitic languages it is generally in form a verbal affair, and usually is so in substance too. As well as I can make out, such it is in most languages. In my universal algebra of logic there is no common noun."

[2] In the (1906) *Monist* article we read "A symbol incorporates a habit, and is indispensable to the application of any intellectual habit at least." (p. 495.) And again: "Strictly pure symbols can signify only things familiar, and these only in so far as they are familiar."

A Rheme is defined as "a sign which is represented in its signified interpretant as if it were a character or mark (or as being so)." It is any sign that is neither true nor false, like most single words except 'yes' and 'no', which are almost peculiar to modern languages.

A Dicent is defined as "a sign represented in its signified interpretant as if it were in a real relation to its object (or as being so if it is asserted)." A proposition, he was careful to point out in the *Monist* (1905, p. 172), is for him not the German *Satz*, but "that which is related to any assertion, whether mental and self- addressed or outwardly expressed, just as any possibility is related to its actualisation." It is here defined as a dicent symbol.

> "A dicent is not an assertion, but a sign capable of being asserted. But an assertion is a dicent. According to my present view (I may see more light in future) the act of assertion is not a pure act of signification. It is an exhibition of the fact that one subjects oneself to the penalties visited on a liar if the proposition asserted is not true. An act of judgment is the self-recognition of a belief; and a belief consists in the deliberate acceptance of a proposition as a basis of conduct. But I think this position is open to doubt. It is simply a question of which view gives the simplest view of the nature of the proposition. Holding then that a Dicent does not assert, I naturally hold that the Argument need not be actually submitted or urged. I therefore define an Argument as a sign which is represented in its signified interpretant not as a Sign of that interpretant, the conclusion, but as if it were a Sign of the Interpretant, or perhaps as if it were a Sign of the state of the Universe to which it refers in which the premises are taken for granted."

A sign may appeal to its dynamic interpretant in three ways: –

1. An argument only may be submitted to its interpretant, as something the reasonableness of which will be acknowledged.
2. An argument or dicent may be urged upon the interpretant by an act of insistence.
3. Argument or dicent may be, and a rheme can only be, presented to the interpretant for contemplation.

> "Finally, in its relations to its immediate interpretant, I would divide signs into three classes, as follows :—
>
> 1. Those which are interpretable in thoughts or other signs of the same kind in infinite series.
> 2. Those which are interpretable in actual experiences.
> 3. Those which are interpretable in qualities of feelings or appearances.
>
> The conclusion is that there are ten principal classes of signs: – 1, Qualisigns; 2, Iconic Sinsigns; 3, Iconic Legisigns; 4, Vestiges or Rhematic

> Indexical Sinsigns; 5, Proper Names, or Rhematic Indexical Legisigns; 6, Rhematic Symbols; 7, Dicent signsigns (as a portrait with a legend); 8, Dicent Indexical Legisigns; 9, Propositions, or Dicent Symbols; 10, Arguments."

This treatment of the familiar logical distinction between Term, Proposition, and Argument is somewhat different from the account given in the Monist (1906) article, where it is explained that "the first two members have to be much widened," and where we are introduced to Semes, Phemes, and Delomes.

> "By a *Seme* I should mean anything which serves for any purpose as a substitute for an object of which it is, in some sense, a representative or Sign. The logical Term, which is a class-name is a Seme. Thus the term 'The Mortality of man' is a Seme. By a *Pheme* I mean a sign which is equivalent to a grammatical sentence, whether it be Interrogative, Imperative or Assertory. In any case, such a Sign is intended. to have some sort of compulsive effect on the Interpreter of it. As the third member of the triplet, I sometimes use the word *Delome* (pronounced deeloam, from ??????) though *Argument* would answer well enough. It is a sign which has the Form of tending to act upon the Interpreter through his own self-control, representing a process of change in thoughts or signs, as if to induce this change in the Interpreter."

A Graph, he says, is a Pheme, "and in my use hitherto, at least, a Proposition. An Argument is represented by a series of Graphs."

There follows a discussion of "the Percept, in the last analysis the immediate object of all knowledge and all thought."

> "This doctrine in no wise conflicts with Pragmaticism, which holds that the Immediate Interpretant of all thought proper is Conduct. Nothing is more indispensable to a sound epistemology than a crystal-clear discrimination between the object and the Interpretant of knowledge; very much as nothing is more indispensable to sound notions of geography than a crystal-clear discrimination between north latitude and south latitude; and the one discrimination is not more rudimentary than the other. That we are conscious of our Precepts is a theory which seems to me to be beyond dispute; but it is not a fact of Immediate Perception. A fact of Immediate Perception is not a Percept, nor any part of a Percept; a Percept is a Seme, while a. fact of Immediate Perception or rather the Perceptual Judgment of which such fact is the immediate Interpretant is a Pheme that is the direct Dynamical Interpretant of the Percept, and of which the Percept is the Dynamical Object, and is with some considerable difficulty (as the history of psychology shows) distinguished from the Immediate Object,

though the distinction is highly significant. But not to interrupt our train of thought, let us go on to note that while the Immediate Object of a Percept is excessively vague, yet natural thought makes up for that lack (as it almost amounts to) as follows: – A late Dynamical Interpretant of the whole complex of Percepts is the Seme of a Perpetual Universe that is represented in instinctive thought as determining the original Immediate Object of every Percept. Of course, I must be understood as talking not psychology, but the logic of mental operations. Subsequent Interpretants furnish new Semes of Universes resulting from various adjunctions to the Perceptual Universe. They are, however, all of them, Interpretants of Percepts.

Finally, and in particular, we get a Seme of that highest of all Universes which is regarded as the Object of every true Proposition, and which, if we name it all, we call by the somewhat misleading title of The Truth."

That said, let us go back and ask this question: How is it that the Percept, which is a Seme, has for its direct dynamical Interpretant the Perceptual Judgment, which is a Pheme? For that is not the usual way with Semes, certainly. All the examples that happen to occur to me at this moment of such action of Semes are instances of Percepts, though doubtless there are others. Since not all Percepts act with equal energy in this Way the instances may be none the less instructive for being Percepts. However, Reader, I beg you will think this matter out for yourself, and then you can see – I wish I could – whether your independently formed opinion does not fall with mine. My opinion is that a pure Perceptual Icon – and many really *great* psychologists have evidently thought that Perception is a passing of images before the mind's eye, much as if one were walking through a picture gallery, – could not have a Pheme for its direct Dynamical Interpretant. I desire, for more than one reason, to tell you why I think so, although that you should to-day appreciate my reasons seems to be out of the question. Still I wish you to understand me so far as to know that, mistaken though I be, I am not so sunk in intellectual night as to be dealing lightly with philosophic Truth when I aver that weighty reasons have moved me to the adoption of my opinion; and I am also anxious that it should be understood that those reasons have not been psychological at all, but purely logical. My reason, then, briefly stated and abridged, is that it would be *illogical* for a pure Icon to have a Pheme for its Interpretant, and I hold it to be impossible for thought not subject to self- control, as a Perceptual Judgment manifestly is not, to be illogical. I dare say this reason may excite your derision or disgust, or both; and if it does I think none the worse of your intelligence."

There is an interesting letter dated March 14, 1909, in which Lady Welby's own Triad of Interpretation is discussed. "I confess," he writes, " I had not

realised before reading your *Encyclopaedia Britannica* article, how fundamental your trichotomy of Sense, Meaning and Significance really is. It is not to be expected that concepts of such importance should get perfectly defined for a long time.... I now find that my division (of the three kinds of Interpretant) nearly coincides with yours, as it ought to do exactly, if both are correct. I am not in the least conscious of having been influenced by your book in setting my trichotomy." He does not believe that there was even an unconscious reminiscence, and consequently feels "some exultation in finding that my thought and yours nearly agree."

He proceeds to inquire how far there is agreement. "The greatest discrepancy appears to lie in my *Dynamical Interpretant* as compared with your 'Meaning'. If I understand the latter, it consists in the effect on the mind of the Interpreter that the utterer (whether vocally or by writing) of the sign intends to produce. My Dynamical Interpretant consists in direct effect actually produced by a Sign upon an Interpreter of it. They agree in being effects of the Sign upon an individual mind, I think, or upon a number of actual individual minds by independent action upon each. My *Final Interpretant* is, I believe, exactly the same as your Significance; namely, the effect the Sign *would* produce upon any mind upon which circumstances should permit it to work out its full effect. My *Immediate Interpretant* is, I think, very nearly, if not quite, the same as your 'Sense'; for I understand the former to be the total unanalysed effect that the Sign is calculated to produce; and I have been accustomed to identify this with the effect the sign first produces or may produce upon a mind, without any reflection upon it. I am not aware that you have ever attempted to define your term 'Sense', but I gather from reading over what you say that it is the first effect that a sign would have upon a mind well qualified to comprehend it. Since you say it is Sensal and has no Volitional element, I suppose it is of the nature of an 'impression'. It is thus, as far as I can see, exactly my Immediate Interpretant. You have selected words from vernacular speech to express your varieties, while I have avoided these and have manufactured terms suitable, as I think, to serve the uses of Science. I might describe my Immediate Interpretation as so much of the effect of a Sign as would enable a person to say whether or not the Sign was applicable to anything concerning which that person had sufficient acquaintance."

As regards Meaning and Intention, he continues: "My Interpretant with its three kinds is supposed by me to be something essentially adding to anything that acts as a Sign. Now natural Signs and symptoms have no utterer; and consequently have no Meaning, if Meaning be defined as the intention of the utterer. I do not allow myself to speak of the 'purposes of the Almighty', since whatever He might desire is done. Intention seems to me, though I may be mistaken, an interval of time between the desire and the laying of the train by which the desire is to be brought about. But it seems

to me that desire can only belong to a finite creature." And he sums up as follows: –

> "Your ideas of *Sense*, *Meaning*, and *Signification* seem to me to have been obtained through a prodigious sensitiveness of Perception that I cannot rival; while my three grades of Interpretant were worked out by reasoning from the definition of a Sign what sort of thing *ought* to be noticeable and *then* searching for its appearance. My *Immediate Interpretant* is implied in the fact that each Sign must have its own peculiar Interpretability before it gets any Interpreter. My *Dynamical Interpretant* is that which is experienced in each act of Interpretation and is different from that of any other; and the *Final Interpretant* is the one Interpretative result to which every Interpreter is destined to come, if the Sign is sufficiently considered. The Immediate Interpretant is an abstraction, consisting in a possibility; the Dynamical Interpretant is a single actual event; the Final Interpretant is that toward which the actual tends."

Peirce's conception of an 'Interpretant' receives further elucidation in a letter written at the end of 1908, from which we have already quoted. He there emphasises that in all questions of interpretation it is indispensable to start with an accurate and broad analysis of the nature of a sign. "I define a Sign as anything which is so determined by something else, called its Object, and so determines an effect upon a person, which effect I call its Interpretant, that the latter is thereby mediately determined by the former. My insertion of 'upon a person' is a sop to Cerberus, because I despair of making my own broader conception understood. I recognise three Universes which are distinguished by three Modalities of being. One of these Universes embraces whatever has its Being in itself alone, except that whatever is in this Universe must be present to one consciousness, or be capable of being so present to its entire Being." The objects of this Universe he called Ideas or Possibles, the objects the second or actual Universe being Facts, and of the third Necessitants.

The Mode of Being of signs can be 'possible' (*e.g.*, a hexagon circumscribed in or about a conic); or 'actual' (as with a barometer); or 'necessitant' (as the word 'the', or any other in the dictionary). A 'possible sign he calls, as in the *Monist* article, a *Tone* ("though I am considering replacing this by 'Mark'"); an 'actual' sign, a *Token*; a 'necessitant' sign a *Type*.

> "It is usual and proper to distinguish two Objects of a Sign, the Mediate without, and the Immediate within the Sign. Its Interpretant is all that the sign conveys; acquaintance with its Object must be gained by collateral experience. The Mediate Object is the Object outside the Sign; I call it the *Dynamoid Object*. The Sign must indicate it by a hint; and this hint, or its substance, is the *Immediate Object*."

When the Dynamoid object is 'possible', the sign will be *Abstractive* (as the word Beauty), when it is actual the sign will be *Concretive* (anyone's barometer or a written narrative of any series of events); and thirdly, "for a sign whose Dynamoid Object is a Necessitant, I have at present no better designation than a '*Collective*', which is not quite so bad a name as it sounds to be until one studies the matter; but for a person like me, who thinks in quite a different system of symbols to words, it is awkward and often puzzling to translate one's thought into words! If the Immediate Object is a 'Possible' (that is, if the Dynamoid Object is indicated, always more or less vaguely, by means of its Qualities, etc.) I call the Sign a *Descriptive*; if the Immediate is an Occurrence, I call the Sign a *Designative*, and if the Immediate Object is a Necessitant, I call the Sign a *Copulant*; for in that case the Object has to be so identified by the Interpreter that the Sign may represent a necessitation."

A Possible can determine nothing but a Possible, and a Necessitant can be determined by nothing but a Necessitant. "Hence," he continues, "it follows from the definition of a Sign that since the Dynamoid Object determines the Immediate object,

which determines the Sign itself,
which determines the Destinate Interpretant,
which determines the Effective Interpretant,
which determines the Explicit Interpretant,

the six trichotomies, instead of determining 729 classes of signs, as they would if they were independent, only yield 28 classes; as I strongly opine (not to say almost approve) there are four other trichotomies of signs of the same order of importance, instead of making 59,049 classes, these will only come to 66. The additional 4 trichotomies are undoubtedly first *Icons* (or Simulacra), *Indices*, *Symbols*, and then three referring to the Interpretants. One of these I am pretty confident is: *Suggestives*, *Imperatives*, *Indicatives*, where the Imperatives include Interrogatives. Of the other two I think that one must be into Signs assuring their Interpretants by *Instinct*, *Experience*, and *Form*. The other I suppose to be what (in the Monist (1906) article) I called *Semes*, *Phemes*, and *Delomes*."

PEIRCE'S PLACE IN AMERICAN PHILOSOPHY

John Henry Muirhead. "Peirce's Place in American Philosophy." *Philosophical Review* 37.5 (September 1928): 460–481.

I

When the history of American philosophy in the 19th century comes to be written in greater detail than hitherto, the important place of Charles S. Peirce as a pathfinder in every one of the many fields that his work touched will have to receive fuller recognition than has as yet been accorded to it. His life covered the period which felt the influence first of the romantic idealism of the transcendentalists, then of the Hegelianism of W. T. Harris and the St. Louis group, later of the reconstructed idealism of which Royce was the chief representative, and finally of the more radical reactions against absolutism led by James and Mr. Dewey. With these movements Peirce was not only in intimate touch, but from one side or another in lively sympathy. It was for this reason that it was his fate, as it has been of few others and those only the greatest, to be claimed as a founder by different schools of thought. By writers in logic he has been assigned a leading place in the development of the logical realism associated in England most conspicuously with the name of Bertrand Russell. He himself claimed the title of a "critical common-sensist,"[1] reminding one both of the older naïver realism of the Scottish school and of the critical realism of Mr. Santayana and his friends. Readers of Royce's later works are familiar with the frequent allusions to his debt for some of their more original features to suggestions derived from Peirce's writings. Finally and more noisily, his connection with pragmatism, first as the inventor of the name and of the often repeated formula of its method, and secondly as the advocate of its favorite doctrine of the essential indeterminateness of nature and "cosmic weather," has been exploited in the interest of that form of philosophy. It is in this sense that he figures in Woodbridge Riley's brilliant sketch of *American Thought* as the representative of what he calls "primitive pragmatism" and that he has been claimed by Mr. Dewey in Professor

[1] *Monist*, Vol. XV, pp. 481 ff.

Cohen's volume of selected papers[2] as "in the literal sense of the word pragmatist, more of a pragmatist than James."[3]

While some may find in this many-sidedness an admirable feature marking Peirce out as the truly seminal writer that he was, and while Professor Cohen is within his right in contenting himself in his Introduction with drawing attention to it, others may find in it more of a challenge. Is it possible, they will be inclined to ask, that a writer imbued with the spirit of logic as he was, believing as he did in the ultimacy of what he calls "concrete reasonableness" in thought and practice, claiming as he constantly does that "Synechism" or faith in the essential continuity of things is the chief mark of his thought, should have left his own philosophy with so little internal coherence that like the empire of Alexander it fell at his death into a collection of warring satrapies? Is it not more likely that a closer study of his work in its origin and development as a whole will show it to have been governed by some central tendency that allied it more nearly with one or other of the great traditions of philosophic method and doctrine? This question is all the more pertinent seeing that in the essay already quoted, "The Pragmatism of Peirce," Professor Dewey ends his summary with the suggestive question "whether recourse to Peirce would not have a most beneficial influence on modern discussion." If Mr. Dewey's many admirers, of whom I confess myself one, are going to take this call of "Back to Peirce" with the seriousness with which he obviously issues it, it is a matter of the utmost importance to have a clear idea as to which of these many Peirces is the real one from whom to take our start. The present paper is a very imperfect attempt to set his thought in a truer perspective than seems to the writer hitherto to have been done, in the hope, which he shares with Dewey, of the beneficent effect that such an understanding may have on con temporary discussion. If it were to form the basis of a kind of Peace of Utrecht which might end the long and bitter war between Pragmatism and its enemies, whether of the idealistic or the realistic camp, it were a consummation devoutly to be hoped.

What I propose to do is *first* to give a short sketch of the development of his ideas as that may be gathered from the most accessible of his published articles with special reference to their bearing on Pragmatism, and *secondly*, setting aside in the light of this development the attempt to identify him with that form of doctrine as founded on misapprehension, to summarize the

[2] C. S. Pierce, Chance, Love, and Logic (1923), edited by Morris R. Cohen.

[3] *Cf.* what Professor Cohen says of him in his article on "Later Philosophy" in the *Cambridge History of American Literature*: "If philosophic eminence were measured not by the number of finished treaties of dignified length but by the extent to which a man brought forth new and fruitful ideas of radical importance Charles S. Peirce would easily be the greatest figure in American Philosophy."

main influences that seem to have molded his thought and as a matter of fact allied him with quite another tradition. If I omit altogether reference to his contributions to symbolic logic and touch only lightly on his theory of induction, it is not because I underestimate their importance, but partly because of my inability to do justice to them, partly because they seem to me and probably would have seemed to himself only of importance in so far as they threw light on his general philosophy. He himself reminded us of the priority of the more general problem when he wrote: "what sort of a conception we ought to have of the universe, how to think of the *ensemble* of things is a fundamental problem in the theory of reasoning."[4]

II

Peirce's chief published articles fall into three clearly marked groups: (1) Those which he contributed to the *Journal of Speculative Philosophy* in 1868 (the second year of its existence); (2) those which were published in the *Popular Science Monthly* ten years later in 1877–8; (3) those which after the interval of another decade appeared in the *Monist* of 1891–3; to which as a kind of aftermath may be added those which in the first decade of the present century he contributed to the *Monist*, Baldwin's *Dictionary of Philosophy*, the *Hibbert* and other journals.

1. The articles of the first of these groups possess a special interest for the student of American philosophy, not only because of the time and place of their appearance, but far more because of their contents. They were coincident with the new start that philosophy in America was just taking in the earnest first-hand study of German, and more particularly of Hegelian, Idealism, of which the *Journal* was the chosen organ. On the other hand, they seem to have been quite independent of that movement for their inspiration and are more truly regarded as representing an independent spring of fresh constructive thought. It was not only that, as was to be expected from one who as he himself tells us had been bred in the laboratory, Peirce approached philosophy from an entirely different angle from that of the St. Louis idealists, but that in so far as he connected himself with the European tradition he went to the great medieval thinkers rather than either to Plato or Hegel. As if further to mark the independence of his starting point he takes his bearings from a criticism of Descartes, the real "father," as he called him, "of modern philosophy," rather than from a criticism of Kant. It is to the correction of the errors of Descartes as they affect both the nature of thought and the reality of the thinking self that the first two articles, on the subjects respectively of "Questions concerning certain faculties claimed for man" and "Some consequences of four incapacities," are directed.

[4] *Chance, Love and Logic*, p. 108.

The "faculties" he chiefly attacks in the former are that of the direct intuition of truth whether by external perception or by introspection; that of imageless or, as he would afterwards have expressed it, "signless" thinking; and that of conceiving of an unrecognizable absolute. With regard to the first of these he develops the doctrine which is the keynote of his whole theory of knowledge as consisting essentially in inference, conceived of as a continuous process in which it is a mere blunder of principle to ask for any first or last. Similarly in what he says of the second incapacity we have the germ of his later doctrine of signs. In a fuller account of Peirce's theory of knowledge, what he says about immediacy and inference with special reference to the question of the status of the sign would call for more detailed treatment.[5] For our present purpose it is to what he says of the last of these incapacities, and the consequences which in the second article he deduces from it, that the main philosophical interest attaches.

He has already convinced himself that upon Cartesian principles, involving as they did the separation not only of matter or the *res extensa* from the *res cogitans* but of the world of objects in general (including the mind itself) from the subject, "the very realities of things could never be known," and that any theory which contained the least vestige of these principles, including Kant's itself, was involved in the same condemnation. In this fundamental criticism he was at one with the Hegelians of St. Louis, but he had reached it by a path of his own and he connected it with a fresh interpretation (the result of a profound study) of the realism of St. Anselm and Duns Scotus rather than with Fichte and Hegel. He saw that his rejection of any immediate intuition of truth involved at once the rejection of the popular interpretation of the medieval doctrine. ("Any given piece of popular information about scholasticism," he held, "may be safely assumed to be wrong.") What Duns Scotus taught and what any true realism must teach was not the reality of universals before or side by side with particular things which might be the objects of intuition, but the existence of an as yet undetermined reality (a "vague," to use a later expression of Peirce's own) towards which the reason of man was on its way, however far short it may yet have fallen.

Here also we have the first sketch of a view of which his subsequent philosophy was only a fuller development. It rests on the distinction between the *ens* or reality which is relative to the limitations of our information and reasoning power, and the *ens* or reality to which full information and correct reasoning will bring us. Seeing that this fullness of knowledge is an ideal of the long future and one that is only conceivable in a society whose achieve-

[5] The same holds of the matter of the articles of the same date as those under review, especially that "On a New List of Categories," which were published in the *Proceedings of the American Academy of Arts and Sciences*.

ments are a corporate rather than an individual possession, it involves the belief in "a *Community* without definite limits and capable of an indefinite increase of knowledge." In this way "those two series of cognitions, the real and the unreal, consist of those which at a time sufficiently future the community will always continue to affirm and of those which under the same conditions will ever after be denied."

The doctrine here sketched on the basis of a criticism of Descartes is further developed in a careful article of about the same date in review of Fraser's edition of Berkeley, which appeared in the *North American Review* of 1871. As a criticism of Berkeley the article is interesting as the first clear statement, so far as I know, in American philosophy of the real place of Berkeley in the history of thought as "the half-way station between Locke and Hume." "The innocent Bishop generated Hume and as no one disputes that Hume gave rise to all modern philosophy of every kind, Berkeley ought to have a far more important place in the history of philosophy than has usually been assigned to him." There has recently been a reaction against the treatment of Berkeley's philosophy as a mere transition phase of the empiricism of Locke with a correspondent emphasis on the appeal to his doctrine of "divine causation." What is particularly interesting in Peirce's account is the connection he established between these two phases of the Bishop's thought as an example of the strange but not infrequent historical alliance between nominalism and Platonism. It is just his denial of reality to sensible things which drives Berkeley to seek for it in an otherwise unknowable cause of phenomena. But to assert the existence of such a cause adds nothing to our knowledge. All that we can mean is that there are regularities in events in relation to what we call a thing, which have to be taken into account beforehand in the conception of that thing. What as a matter of fact we assert when we speak of the reality of a thing is that there is a "general drift" of human thought which will lead to "one general agreement, one catholic consent," a consent which is not limited to men in this earthly life but extends "to the whole communion of minds to which we belong including some probably whose senses are very different from ours." By the object's independence of our thought is therefore meant not independence of all experience and thought. "It is a real which only exists by virtue of an act of thought knowing it, but that thought is not an arbitrary or accidental one, but one which will hold in the final opinion." This Peirce admits is phenomenalism of a sort, for it denies the reality of any unknown thing-in itself which is the cause of our sensations. But it is *not* the phenomenalism which makes the reality of a thing dependent on its being in consciousness. Its standard of the truth of an idea or of the reality of an object is not its presence to perception, as with Berkeley, but its coherence with the experience in general, which "does not depend at all on its being actually present to the mind all the time." On the other hand it *was* the phenomenalism of Kant if we recognize first that

Kant's "Copernican step was precisely the passage from the nominalistic to the realistic view of reality," and second that "It was the essence of his philosophy to regard the real object as determined by the mind: in short, as the normal product of mental action and not as the recognizable cause of it."

What is remarkable in all this is, in the first place, the sureness with which Peirce has arrived for himself at what is essential in the teaching of Kant as the doctrine that "the real object is determined by mind"; in the second place, the connection of this teaching with medieval realism interpreted not as the assertion of the independent existence of universals, but as the assertion of the existence of a conceptual interpretation of the particular thing as experienced here and now which would bring it into harmony with "the body of realities"; and thirdly the decisiveness with which he identifies himself with this form of realism and thus finds his own teaching explicitly with the great medieval tradition of which Duns Scotus was the founder. In the general conclusions to which he had thus been brought he was undoubtedly influenced by his reading of Kant, but going along with this there was the antipathy which the mathematician in him felt to a doctrine that excluded from reality everything of which an image could not be formed and which closed the door on negative quantities and infinitesimals. By such an application of Ockham's razor he admitted that mathematics would be simplified, but it would be "simplified by never advancing to the more difficult matters." To the last with Peirce the decisive factor in the condemnation of all forms of minimalism, including pragmatism, was the denial which they seemed to him to involve of infinitesimals and therewith of the reality of the whole modern science of mathematics.

The second article closes with a criticism of the Cartesian view of consciousness and personality. Peirce accused himself twenty years later[6] of being still at this time too much under the influence of nominalistic views, but in the interpretation of consciousness as having its being not in an unknown substance behind its manifestations, but in the continuity of the process by which the mind passes by aid of the sign (the only immediately given whether it be a word, an image, an action or a mere feeling) from one meaning to another, he indicates sufficiently what he has in view. While it is true that "the phenomenal manifestation of a substance *is* the substance," yet the whole reality is never given in such manifestations. To know our minds as they really are, is, like all other true knowledge, something for which we have to wait upon the future. "Thought is what it is only by virtue of its addressing a future thought," which is only a more developed form of itself. He ends by quoting *Measure for Measure*:

[6] See *Monist*, July, 1892, p. 203.

"proud man
Most ignorant of what he's most assured
His glassy essence,"

a phrase which was to be the title of a later important essay.

2. Any reader approaching the second group of articles mentioned at the outset, ought to have been put on his guard against any interpretation of it that should seem to contradict the clear tenor of the first. There was the less excuse for any such misunderstanding seeing that the first article of this group is devoted to the clearest possible restatement of the results of the earlier group. Nominally concerned with "scientific method," these six articles, like all that Peirce ever wrote, have in view the results which emerge for our conception of the universe as a whole. What they do for us is merely to carry the neo-Kantism sketched above to a further stage of its development.

The first article is concerned with the test of truth and is a particularly vigorous restatement of the hypothesis which underlies all scientific investigation, viz. that "There are real things whose characters are entirely independent of our opinions about them." Different as our sensations may be, corresponding to the difference of our relation to the object, yet "by taking advantage of the laws of perception we can ascertain how things really are and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion."

If we enquire into the ultimate ground of this faith, it is to be found not in its pragmatic success in the settlement of differences of opinion but in the dissatisfaction to which contradictory propositions invariably give rise – a dissatisfaction having its source in turn *not* in the doubt that there is a reality (Peirce acutely remarks that if this were doubted contradiction could not be a source of dissatisfaction) but just in the conviction of its existence. The article ends (as though in view of future alogistic interpretations of it) in an eloquent assertion of the supremacy of logic. "The genius of a man's logical method should be loved and reverenced as his bride whom he has chosen from all the world. She is the one that he has chosen and he knows that he was right in making that choice."

It is in the second article, as everyone knows, that the passage occurs which was claimed by William James in his celebrated California lecture as that in which the standard of Pragmatism was first raised.[7] It would have been odd if it really had been so after all that had gone before and in view of all

[7] It is hardly necessary to quote Peirce's words: After insisting that "our idea of anything is our idea of its sensible effects" he concludes: "It appears then that the rule for attaining the third grade of clearness of apprehension is as follows: Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object."

that was to come after. As a matter of fact the passage occurs in a paper not on the standard of the truth, but on the standard of the lucidity of concepts. It sets forth maxims for the clarification, not for the verification of ideas. It is certainly true that Peirce was at this time not himself wholly clear as to the importance of this distinction; and there are other unfortunate ambiguities in the article, chiefly as to the meaning and the scope he assigns to "active" and "practical" and again to "sensible effects." There is surely a certain irony in the fact that a passage which is concerned just with the question of clearness should have left crucial ideas in a state of obscurity when a word or two of definition in the despised formal sense of *genus* and *differentia* would have supplied precisely what was required. With regard to the meaning of activity, what ever doubt might remain was finally set aside by the wholesale repudiation in later statements of the doctrine of pragmatism as commonly understood. "To say that we live for the sake of action," he writes in 1905, "would be to say that there is no such thing as rational purport." Still more decisively in the article on Pragmatism in Baldwin's *Dictionary of Philosophy*, he repudiates the doctrine that the end of man is action as "a stoical maxim which to the present writer at sixty does not commend itself so forcibly as it did at thirty." As though to take the last stick of support from his traducers, he ends by proposing to his readers, as the means for attaining the highest grade of clearness, that they should remember "that the only ultimate good is to further the development of concrete reasonableness."

It is on the ground of the appeal to sensible effects in the passage before us that, as we have already seen, Dewey claims that "Peirce is more of a pragmatist than James." It is all the more important to recall that here also he sought later to set himself right by a whole-hearted disclaimer of sensationalism. "Modern psychologists," he writes to Mrs. Ladd-Franklin[8] "are so soaked with sensationalism that they cannot understand anything that does not mean that. How can I, to whom nothing seems so thoroughly real as generals and who regard Truth and Justice as *literally* the most powerful powers in the world, expect to be understood by the thorough-going Wundtian? The curious thing is to see absolute idealists tainted with this disease, or men who like John Dewey hover between Absolute Idealism and Sensationalism."

While there is no justification for attributing to Peirce even at this time anything at all resembling Pragmatism as understood by James and Dewey, the articles before us are important as containing the first clear statement of what (as distinguished from this) he himself called Pragmaticism, a name which, as he fondly hoped, "would prove ugly enough to rescue it from the hands of kidnappers." Alexander Bain had already called attention to the

[8] *Journal of Philosophy*, Vol. 13.

practical aspect of belief as a habit of action. "Belief," he had announced, "is that which we act upon." Kant had insisted that the categories of thought are rules of action in the sense of rules for the guidance of thought. Peirce's originality consisted in generalising these suggestions. He frees Bain's doctrine from the nominalism of the sensational philosophy and from the narrowness with which Bain conceived of action; he frees Kant's from limitation to the categories and extends it to conception in general treated of as a form of habit or a preparedness of the mind to act in a particular way in the presence of the appropriate stimulus. The value, in his view, of this generalization was that it succeeded in coordinating thought with conduct as a form of control. "The theory of Pragmaticism was originally based," he writes in 1905, "as anyone will see who examines the papers of Nov. 1877 and Jan. 1878, upon a study of that experience of self-control which is common to all grown men and women, and it seems evident that to some extent at least it must always be so based." "The machinery of logical self-control works on the same plan as does moral self-control in multiform detail. The greatest difference perhaps is that the latter serves to inhibit mad puttings forth of energy while the former most characteristically insures us against the quandary of Buridan's ass. In moral life we are chiefly solicitous about our conduct and its inner springs and the approval of conscience, while in intellectual life there is a tendency to value existence as the vehicle of forms."[9]

Whatever is to be said of the assimilation of concepts to habits (and I suppose from the side of psychology there would be a great deal to be said), it is clear that Peirce has no intention of resolving logic into ethics. Logic has its own special interest, finely defined in this passage as "the value of existence as a vehicle of form," its own unlimited range "bounded solely by the limits of its own powers," its own decisive laws delivering us from the quandaries of Buridan's and other asses. What we here have is the first clear statement in American philosophy of the conational and purposive element in intellectual processes that was afterwards of such decisive importance. How far it influenced Royce in his philosophical development between the writing of the *Religious Aspect of Philosophy* and *The World and the Individual* is a matter of surmise, but when the latter appeared Peirce was not slow to recognize in it the central feature of his own doctrine. In the same letter that contains his repudiation of psychologism he concludes: "Royce's opinions as developed in his *World and Individualism* [sic][10] are extremely near mine. His insistence on the element of purpose in intellectual concepts is essentially the pragmatic position."

[9] *Monist*, Vol. XV, pp. 483–4 and 482 condensed.

[10] In a review of the second volume which appeared in *The Nation* Vol. 75, Peirce writes of it: "As the first serious attempt to apply to philosophical subjects the exactitude of thought that reigns in the mathematical sciences, Royce's *World and Individual* will stand

The article ends with a return to the distinction between the clearness and the veracity of ideas which in spite of ambiguities he has never wholly lost. "Ideas may be ever so clear without being true. How to make them so ... how to give birth to those vital and procreative ideas which multiply into a thousand forms and diffuse themselves everywhere, advancing civilization and making the dignity of man, is an art not yet reduced to rule but of the secret of which the history of science affords some hints." It was to developing these hints that his own logical articles here and elsewhere were devoted.

What further concerns us in the present group is not their contributions to logic, considerable as these are, but the speculation in that upon "The Order of Nature" on the source of the universality and harmony with reality of our ideas of time, space, and force. He is aware of the suggestion that this is the result of natural selection "acting in favor of more and more correct ideas of these matters." But he only mentions it to put it aside on the ground that "it does not seem to account for the extraordinary accuracy with which these conceptions apply to the phenomena of nature." He adds: "it is probable that there is some secret here which remains to be discovered." He came himself to believe that it could only be explained on the ground of some such fundamental identity between the laws of thought and the laws of being as that which formed the main tenet of Royce's idealism.

3. Up to this point in the development of his general philosophy Peirce had been mainly occupied with epistemological questions and been chiefly influenced by antagonism to Cartesian ideas. But the time into which he had been born had other problems of a wider and more immediately pressing kind to occupy it. The advance of physical science and more recently of biology, which seemed to bring not only animal but human life itself under quasi-physical law, had raised in a new and acute form the age-old question of the relation of man to nature and the possibility of vindicating his essential freedom and therewith the ideas on which (however imperfectly they as yet governed practice) the civilization of Christendom rested.

There were two ways in which this vindication might be attempted. It might take the form of insisting on 'determination' of some sort as fundamental concept, – equivalent to the rationality of our world and therefore indispensable if we are to have any philosophy of it at all, – while at the same time recognizing the necessity of distinguishing between different forms of determination according to the level of being that had been assumed – in organic, organic, animal, or mental. It was this line that the Ger man idealism, with

a prominent milestone upon the highway of philosophy." Where he still feels himself unable entirely to follow him is in the absolute idealism which consists in the denial of the distinction between being and being represented. "Royce," he writes, "is completely immersed in his absolute idealism. It is his element and there is total reflection at the surface."

which in the sixties and seventies both England and America were being inoculated, took. But Hegelian idealism was still imperfectly understood and it was easy enough to mistake its doctrine of the dialectic of history for merely another attack on spiritual freedom in the interest of a "block universe." Even though its spirituality could be vindicated, there was still the question of the relation of the material to the spiritual in the process of cosmological evolution. There remained the other method of a frontal attack on the dogma of the exactness and rigidity of the *soi-disant* laws of nature and on the whole idea of determination as a universal mode of the world's being.

In the uncertainty, which in the eighties was beginning to prevail, as to the ultimate constitution of the physical world and the laws it followed, there was much to tempt to this method of attack and it is not surprising that in these years both on the continent and in England there were writers who were endeavoring to counter the mechanical view of the world by proving the existence of an element of spontaneity in the physical world itself, only masked by the uniformities which science for her own purposes and by a method of selection had succeeded in establishing. It was in this spirit that Boutroux wrote of the *Contingency in the Laws of Nature*, that Poincaré identified gravitation with a statistical law of averages, that Bergson wrote on *Creative Evolution*, and James Ward spoke of a Contingency that was discoverable in the heart of nature.

It was unlikely that a mind so alert to newer influences as Peirce's should not share in this general movement or, on the other hand, that one so original should fail to give expression to it in his own way. By the nineties he had begun to regard it as the main requirement for the "architecture" of a theory that it should come to terms with the scientific conception of law which he held had "revolutionized the intellectual world." It is again all the more important to understand precisely the "Tychism" or theory of chance which he advocated in the *Monist* articles of 1891–3,[11] seeing that this is the other element in his philosophy which was taken by William James to lend support to Pragmatism.

While it is usually assumed that what requires explanation is the absence of uniformity in nature, Peirce held that, on the contrary, what requires explanation is precisely the presence of uniformity. While he saw no way of explaining diversity on the basis of a presupposed determinate similarity, he thought he saw his way to explaining determinate similarity on the basis of

[11] The first of these articles is on "The Architecture of Theories"; the second on "The Doctrine of Necessity"; the third on "The Law of Mind"; the fourth contains an ingenious speculation on cellular activity, under the title of "Man's Glassy Essence"; the fifth, the application of the whole to a reinterpretation of biological evolution, bears the title "Evolutionary Love."

an initial indeterminateness. If the inorganic world of matter were taken by itself, it might be difficult to find instances of the precipitation of uniform from diversity, but the mistake was to take it by itself. Bring in life and mind and we can see that it is one of their most universal features that they tend to generalize themselves by the formation of what we call habits. Starting with an initial spontaneity they tend to settle down into uniformities that economize effort and regulate future action. Instead, therefore, of mind with its apparent spontaneity being the offshoot of matter and its fixities, why should not matter be conceived of as the precipitate of mind? Schelling had already conceived of nature as unawakened mind. Peirce would correct this by conceiving of it as partially "effete mind" and as therefore containing the possibility of a renewal of the spontaneity in which it had had its origin. He even suggests that (as Poincaré and others had maintained) the so-called laws of matter are merely statistical uniformities telling us nothing of the mode of action of the ultimate elements. A difficulty might be caused by the axioms of geometry and the propositions founded upon them, which mathematics and, following mathematics with its usual ape-like fidelity, metaphysics have taken to be precise and universal. But recent advances in mathematics he held had shown that there is no reason for supposing that what had hitherto been claimed to be axiomatic truths, *e.g.*, that the three angles of a triangle = 180°, are precisely true. Seeing then, as he also held, that metaphysical axioms are imitations of the geometrical axioms, "now that the latter have been thrown overboard, without doubt the former will be sent after them." Peirce sums up the view of the universe which thus emerges in the words: "Like some of the most ancient and some of the most recent speculations it would be a cosmogony philosophy: it would suppose that in the beginning – infinitely remote – there was a chaos of impersonalized feeling which being without connection or regularity would properly be without existence. This feeling sporting here and there in pure arbitrariness would have started the germ of a generalizing tendency. Its other sportings would be evanescent but this would have a growing virtue. Thus, the tendency to habit would be started and from this, with the other principles of evolution, all the regularities of the universe would be evolved. At any time, however, an element of pure chance survives and will remain until the world becomes an absolutely perfect, rational and symmetrical system in which mind is at last crystallized in the infinitely remote distant feature."[12]

We are not here concerned with the truth of this theory. Its importance has been largely discounted by the direction which recent anti-materialistic thought has taken corresponding to the first of the two lines indicated above. Instead of trying to vindicate freedom by undermining the belief in the

[12] *Chance, Love and Logic*, p. 177.

validity in its own sphere of mechanical law, it insists on the necessity of recognizing different levels of existence each with its own kind of law as the subject matter of the different sciences.[13] We are concerned merely with what he meant by the doctrine and with the type of philosophy with which, as developed by him, it allies him.

As stated in this form there might seem to be a *prima facie* case for interpreting the doctrine in the sense of the pragmatic belief in open possibilities in nature, *lacunae* so to speak, in her laws.[14] But it is difficult to see how even so it could be of any "practical" significance. Nature to Peirce meant just the set habits into which the original feeling-stuff had fallen. Only as such a system of habits could nature be known. Only as such a system could it form a stable foundation for either thought or practice. If the end of all action, whether theoretical or practical, is, as he also held, that kind of harmony between our thoughts and the nature of things which he calls concrete reasonableness, "becoming governed by law, instinct with general ideas," nothing could be more impractical and self-defeating than to reckon on any remnant of caprice that an abstract metaphysic might find in things.

As a matter of fact, Peirce made no attempt to work out the theory consistently with itself. The *formation* of habit is itself described as the result of "a law of mind": law, in other words, is explained by the assumption of a previous law. Not less is habit dependent for its *efficacy* on the recurrence in nature of similar circumstances – in other words on pre-existing uniformities. Even the very existence of chance is conceived of by him as an imperfection in the universe which will in the end be eliminated in a world which by the crystallization of mind in it has "become an absolutely perfect rational and symmetrical system." If, moreover, this faith in an ultimate tendency to rational system is to have any warrant in the nature of things, it must be

[13] "Let us not," writes Gilbert Lewis as the summing up of his brilliant book on *The Anatomy of Science*, "be confused by the double sense in which we use words like 'physics' and 'biology'. We may well suspect that the subject matter of physics and the subject matter of biology constitute a single continuum but the *sciences* of physics and biology comprise postulates and laws which no more need to be compatible with one another than do the geometries of Euclid and Lobachevski. The science of physics rests upon the postulate of determinism; the science of biology, unless it is to ignore deliberately the phenomenon of behavior, must abandon this postulate and substitute therefore a postulate of choice or freedom. As we continue the great adventure of scientific exploration our models must often be recast. New laws and postulates will be required while those that we already have must be broadened and extended and generalized in ways we are now hardly able to surmise."

[14] Peirce himself tells us that both the name and the doctrine of pragmatism were connected in their origin with Chauncey Wright's "Cosmic Weather." See *Chance, Love and Logic*, p. xix note.

founded on the presence in the feeling-substance itself of some deeper law of inherent *nisus* towards that consummation. To explain wherein such a law can consist is precisely the object of the last essay of this group, on "Evolutionary Love."

This essay is perhaps of all his published papers the one that is most characteristic of his many-sided and essentially human personality. The prophetic insight of some passages in it comes home to us with special force today. The question of the determining factor in evolution was not one on which biology had the last word. Darwinism had been pressed into the service of what he considered a particularly devastating social theory. The struggle for existence working on a basis of chance variations, when transferred to society, meant laissez-faire and a policy of Gradgrind. Peirce saw in this only ruin to the social order. "The Gradgrind banner," he declares in a prophetic passage, "has been this century long flaunting in the face of heaven with an insolence to provoke the very skies to growl and rumble. Soon a flash and quick peal will shake economists quite out of their complacency, too late. The twentieth century in its latter half shall surely see the deluge-tempest burst upon the social order – to clear upon a world as deep in ruin as that freed – philosophy has long plunged it into guilt, no post-Thermidorian high jinks then."

He gave the existing system too long a rope. A shorter, as we now know, was sufficient wherewith to hang itself. But he knew what he was speaking of and there seemed to him no higher mission for philosophy than to cut away the props that it derived from a false interpretation of the law of progress. For this purpose he tries to show that, while Darwin appeals to chance variations, and Weismann to physical necessity, Lamarck was on truer lines than either in leaving room for a deeper law of inward striving after higher forms of being and growth by experience. The theory of "creative evolution" and the *élan vital* has since been made familiar to us by Bergson and others. The principle that underlies it, which Peirce calls "evolutionary love," has received too little attention. Perhaps not the least of the benefits that would accrue from recourse to him would be the redirection of attention to this deeper *élan*.

Returning to Tychism, what is made clear in this concluding paper is that it is intended to dispose of any purely necessitarian interpretation of evolution by the substitution for it of one that appeals not to chance and the absence of law but to the subordination both of necessity and chance to the higher law of love.

III

I have tried in what has preceded to trace the development of the general theory which Peirce, according to the phase of it which he is emphasizing, calls at one time Realism, at another Common-sensism, at another Schelling-

fashioned Idealism, but most commonly Pragmaticism. My object has been to bring out the difference between it and pragmatism as that doctrine has taken form and is today widely held in America. It remains to try to sum up its leading features by a reference to the main influences which seem to have entered into its formation.

1. Passing over what he says of his early inoculation with the bacilli of Transcendentalism and his own training in the laboratory, one of the earliest and perhaps the most fundamental of all these influences was that which, as we have seen, came to him from the study of medieval logic and particularly of Duns Scotus. From him he learned the meaning and place of the universal in the being of things, not as another kind of intuitable particular nor as a mere abstract notion that may form the content of a class name, but as the principle that is embodied in the particular and that gives it such individuality as it possesses – the principle that makes a tree a tree, a man a man 'for a' that'. Whether Peirce realized clearly the distinction between what his friend Josiah Royce, following Hegel, called the abstract universal (the common property in virtue of which names are given) and the concrete universal (the unity of principle that pervades the parts of any organic whole) – may be questioned, but that the universals in which he believes as "literally the most real and powerful powers in the world" were of the latter type there can, I think, be no doubt. Just such universals he conceived it to be the object of the form of induction he calls "hypothesis" to reach. It was on the subordination of all human action to such universal principles in practice that all true progress in his view depended. It was such subordination, finally, both in theory and practice, that he meant by "concrete reasonableness" and that he declared to be the chief end of man.

2. Equally certain, both from what he has himself told us of his intellectual development and from the whole tenor of his writings, was the influence of the study of Kant's *Critique of Pure Reason* – the text book, as it might be said, of the philosophically wise of his generation. From this he learned not, as pragmatism would have it, the subordination of all activity to practice and of logic to ethics, but first (what is a wholly different thing) the purposiveness of all activity whether practical, theoretic, or aesthetic. It was the general view founded on the recognition of this purposiveness that, to distinguish it from pragmatism, he called pragmaticism and that since his time has become, I suppose, (though not under that unkidnapable name) a commonplace of philosophy. In the second place, he learned from Kant the place of thought as the direction of intellectual and moral activity towards unity and organization in the "matter of experience." Not all experience was perception and thought. He complains of Hegel's resolution of it into thought and immediacy. There was feeling and there was will. Nevertheless experience through which there does not run a thread of thought like a strain of music through notes (the metaphor is his), is a mere confusion and no true

experience of anything. The third thing he learned from his study of Kant was the impossibility of combining the belief in an unintelligible thing-in-itself with the real teaching of the *Critique*. The place of the thing-in-itself had been taken once for all by the thing at the determination of which we arrive when the process, as just described, has been brought to completeness in an exhaustive and harmonious experience. This for us must remain an ideal; but its existence *as an ideal* witnesses to our belief in a community of minds or in a common mind (Peirce believes that the one implies the other) in which it will one day be realized. This was the furthest he was willing to go in the attempt to prove the existence of a universal mind, to which all truth was already present. He thought Royce's attempt to take this further step well worthy of consideration.[15] But he himself could see his way no farther than to an appeal to the harmony which the belief in it brings into life both from the side of theory and practice. Like Coleridge he did not believe that the being of God was demonstrable in any strict sense of the word, but like Coleridge he was ready to say "assume it and all becomes clear."

3. The third of the influences in the light of which his work must be understood, was that which came from mathematics and the study of the logic of mathematics, in which he was one of the recognized leaders. If this had been the sole factor in his philosophical development, or even if it had been a more decisive one than it really was, there might have been a better case for allying him with Pragmatism. The Italian logician, Vailati,[16] in the same number of the *Monist* in which Peirce's "Prolegomena to an apology for Pragmaticism" appeared wrote on the connection between "Pragmatism and Mathematical Logic,"[17] emphasizing this alliance. As a matter of fact, in the autobiographical passage already quoted all that he claims for his mathematical conceptions is that they modified the "Schelling-fashioned idealism" with which he had previously been inoculated and which ended by coming to the surface. Whatever might be the points of alliance between pragmatism and

[15] See his review of the *World and the Individual*, Vol. II, *Nation*, Vol. 75, No. 1935

[16] *Monist*, Vol. XVI. The writer draws out six points of agreement between Pragmatism and Mathematical Logic. Five of them – the denial of the ultimateness of the distinction between categorical and hypothetical propositions, the emphasis on the history of theories, the insufficiency of the classical conception of definition by *genus* and *differentia*, the nature and place of postulation in scientific method, the rule for testing the truth of hypotheses, and the stringent application of Ockbam's razor to scientific conceptions – may be said by that time to have been commonplaces of modern logic and owed little or nothing to pragmatism. The remaining one, "repugnance to the vague, indefinite or generic," was precisely what Peirce, as we have seen, would have disowned in the interest of the realism which was the fundamental note of his philosophy.

[17] See his criticism of Dewey's *Studies in Logical Theory* in *The Nation*, Vol. 79, No. 2046.

mathematical logic, they were all outweighed for Peirce by the unforgivable sin of a nominalism that meant denying the reality of infinitesimals in mathematics and importing into logic what he calls "the trivial language of practical life."[18]

4. The last of the influences that deserve mention (like all those that go deepest in a man's mental make-up), is difficult to describe. Peirce would probably have rejected the description of it as Christianity. Perhaps he would have been less unwilling to have it called the Platonic tradition which underlies the Christian theology. However described, it was the conviction in his mind of two things: *first* the underlying unity of human society, the reality of what idealists have called the general will, and *secondly* the underlying unity between the community of finite souls and the soul of the world. In respect to the first of these we may not be prepared to accept Peirce's mystical doctrine of the existence of a 'spirit' in a people or an age which achieves results "beyond the powers of unaided individuals,"[19] but the tenacity with which he held to it witnesses to the vividness with which he realized the dependence of individuals on the sustaining spirit of their corporate life. And with regard to the second, while, as we have seen, Peirce had little belief in the ordinary arguments for the existence of God, he yet held that "it would be folly to suppose that any metaphysical theory in regard to the mode of being of the perfect is to destroy the aspiration toward the perfect, which is the essence of religion. Am I to be prevented from joining in the common joy as the revelation of enlightened principles of religion which we celebrate at Easter and Christmas because I think that certain scientific, logical and metaphysical ideas which have been mixed up with these principles are untenable? To do so would be to estimate these errors as of more consequence than the truth."[20]

It would not be true to say that Peirce ever succeeded in bringing the ideas that came to him from these different sources into a consistent whole. But that like Coleridge again, with whom, both in his strength and in his weakness, we are often tempted to compare him, he felt the need of so doing, is abundantly plain.[21] Unlike Coleridge he was fortunate in having as friend a companion thinker whom he had himself profoundly influenced and with whose development of his own ideas he was in profound sympathy.

[18] See p. 9 above and the criticism of Dewey's *Studies in Logical Theory* in *The Nation*, Vol. 79, No. 2046.

[19] *Chance, Love and Logic*, p. 297.

[20] *Popular Science Monthly*, June, 1878 (*Chance, Love and Logic*, p. 130).

[21] After the summary of "the materials out of which chiefly a philosophical theory ought to be built" in the paper on the Architecture of Theories he prays "May some future student go over the ground again and have the leisure to give his results to the world."

What particular significance the philosophical alliance of Peirce and Royce has for the future of American philosophy lies beyond the scope of the present paper. What I have tried to bring out is the line in which the true affinities of the work of the elder of these thinkers are to be sought and the kind of benefit that might accrue to contemporary discussion from the "recourse to Peirce" to which Mr. Dewey summons us. The line lies, I believe, in a return to the great central philosophical tradition which for lack of a better name we may call Platonic; the benefit will be (what perhaps is most needed at the present time, in America perhaps as much as elsewhere) a sense that some firm ground has been won here as elsewhere by the best of the thinking which distinguished the end of the nineteenth and the beginning of the twentieth century, from which assured progress may be made.

CONTINUITY, THE FORM OF FORMS, IN CHARLES PEIRCE

Charles Hartshorne. "Continuity, the Form of Forms, in Charles Peirce." *The Monist* 39.4 (October 1929): 521–534.

The philosophy of Charles Peirce is a vast intellectual cosmos, in its major outlines scarcely better known at the present time, than was the system of Aristotle in the late dark ages. The reason in both cases is the same – the non-publication, in available form, of the philosopher's principal writings. This lack in the present case is soon to be remedied, much more completely, happily, than in the Aristotelian parallel.

Anything like an exposition of so profoundly original and comprehensive a philosophy cannot here be attempted. What is offered in the following pages may be described as a variation on a Peircean theme suggested by prolonged study of the philosopher's published and unpublished writings.[1] This theme is indicated by the following quotations from unpublished sources: –

"In philosophy the language of continuity, without which no physical science could have come into being, is to this day a strange tongue." "Continuity is the word of all modern science." "Continuity, than which no conception yet discovered is higher." "Continuity is the *lucerna pedibus* in all the dark paths of logical and philosophical inquiry."

Again and again this note recurs in the writings of Peirce. Moreover, it is woven into the very title by which he summarized his philosophical position, namely, not pragmatism, nor tychism, but – "synechism," from the Greek word for "holding together" or "making continuous."

Nevertheless, it is necessary to emphasize that this conception, central as it is, forms but one of at least a trinity of major technical ideas, all of which would have to be considered in an exposition of Peirce's philosophy as a whole, and none of which can be fully appreciated apart from its integration with the others. Besides continuity, the two remaining doctrines are: the theory of categories (*One, Two, Three,* or: *Feeling, Reaction,* and *Significance*) and the theory of signs or logic (an aspect of which was *Pragmatism*).

[1] Although the principal sources of this article are unpublished, the following published writings of Peirce may be consulted: *Chance, Love, and Logic* (Ed. Morris Cohen), pp. 202–237, 259–300; articles in *The Monist*, Vol. XV, pp. 180 ff. and (on "Synechism" and "Pragmatism") in Baldwin's *Dictionary of Philosophy and Psychology*.

I assume, without argument, the following definition of philosophy: The descriptive science of the most general characters of experience, and the explanatory science of the total universe of actuality and possibility. The elucidation of the terms of this definition will exhibit the centrality of the conception of continuity for all philosophical inquiry.

1. *Description as comparison.* All descriptive science begins by comparison or classification, by positing relations of likeness and difference. There are two views of the logic of these relations. Red and orange are both alike and different, and the likeness, together with difference, involves, and seems almost to consist in, a continuous series of possible intermediaries between the two. Red and orange shade into one another. In the end, so do all colors, mediately or immediately. Here is one type of likeness-difference, one aspect at least of classification. Variation *may* at least have the mode of potential continuity (whether the intermediaries are all actual or not being a flatter for further consideration.) The question at once arises, has variation any other possible mode, such as would involve absolute discontinuity, the absolute impossibility of intermediate forms? The following grounds appear to leave us little choice but to deny such an alternative:

a) A difference exclusive of potential intermediaries would be a "difference of kind" only, and not "of degree." But the idea of separate kinds has a merely relative validity, is itself a matter of degree; ultimately there is but one kind of thing, namely, the kind of thing which in the broadest sense of the word is a thing, or is a something. Absolute plurality of genera, of beings, would destroy being as such, and all general categories. The old arguments of the monists from Parmenides down have an aspect of unrefuted validity. They are often ignored; they are never overthrown. Absolute discontinuity of being contradicts being, of quality contradicts quality, and so on through all general categories.

b) The impossibility of intermediate degrees of a difference is a merely negative character which no observation could directly or indirectly reveal. It could not be perceived, there could be no ground for inferring it. The possibility of intermediaries, on the other hand, can be observed to be fulfilled in certain cases, and it ought for the purposes of investigation to be postulated in all cases. Observation, it is true, can reveal that two things are very different, extremely different, or even that we are unable for the time being to find any resemblance between them. Black and yellow, for example, might impress us in this way, until the intermediary forms of brown were put before us. Can there be any proof that the appearance (so far as there is such an appearance) of absolute gaps between temperature sensations and colors, for example, is due to any other cause than the contingent fact that we have no organs for perceiving the intermediaries? That such organs would be possible is a reasonable and a fruitful hypothesis, as I hope elsewhere to show.

c) The hypothesis of intermediaries stimulates imaginative experiment and perceptual inquiry. It reveals the universe of potential forms as far richer than upon any other view; it refuses to accept the results of previous observation as furnishing a complete account either of what might be, or even, with respect to the hidden aspects of reality, of what is. The opposite hypothesis sets up limits which are without verifiable meaning, besides being logically self-contradictory.

The hypothesis of continuity is thus more than an hypothesis; it is a formally necessary, an empirically adequate, and a fruitful analysis of the meaning of comparison or classification. It is the definitive analysis of analysis.

d) In the history of philosophy, the continuity of forms is a conception that, in some approximate form, has haunted such minds as Heracleitus, Parmenides, Plato, Leibniz, Spinoza, Kant, Hegel, Cournot, and Peirce. In contemporary thinking there are signs of its emergence in many quarters. Its establishment would justify simultaneously the two great visions of the unity of being and of the relevance of mathematics to metaphysics – two of the most persistent of all philosophical convictions.

The relationships to Plato and to Kant deserve special consideration. Recent research has brought to light aspects of Plato's theory of "the ideas as numbers" which correspond strikingly with Peirce's similarly mathematical doctrine of the categories. (Yet the evidence does not favor the assumption that Peirce derived his views from the study of Plato.) Both doctrines culminate in the same conception of the graduated or relative character of distinctions between ideas and in other aspects expressed for Peirce by the term *continuous*. The principal differences are, perhaps, first, that the formal side of the theory is more clearly defined by Peirce – who has modern mathematics and mathematical logic to build on; and, second, that the side of concreteness, the relation of the ideas to experience as a whole (a relation mediated for both thinkers by the supreme idea of *good*) is, in the doctrine of pragmatism and other conceptions espoused by our American thinker, more unambiguously and adequately worked out.

Kant's appendix to the *Dialectic* contains an impressive exposition of the principle of *affinity* – "*non datur vacuum formarum*" – which is referred to by Peirce, and which, unlike the Platonic anticipations, almost certainly contributed not a little to the development of his doctrine. The exposition of Kant comes close to the essence of the matter (though not in *every* respect an advance over Plato's treatment); and if it falls short of the synechistic doctrine, this is partly because Kant fails to apply the principle to the ideas of philosophy as thoroughly as to those of natural science; partly, also, because he fails to note what his own exposition has none the less rendered so clear, namely, that his doctrine implies the centrality of a super-spatial geometry for all intellectual analysis; partly, finally, for still further reasons which may here be omitted.

2. *Science*. The definition of philosophy as a science suggests that we should consider what may be the logic of comparison employed by the recognized or "successful" sciences, such as physics. The logic of physics is conditioned by the conception of a four-dimension continuum. The potential continuum of forms which biology has substituted for the old logic of species can be looked upon, however inadequately, as a specialization of this presupposed physical continuity. The blending of space and time, of matter and energy, of law and freedom, in recent physics illustrates the breakdown in that science of most of its lingering pseudo-absolute discontinuities. The quantum which appear in conflict with this tendency, really illustrates it, for a quantum is an *actual* discontinuity, characterized in terms of a background of potential, though at present, in our world, perhaps unrealized, intermediaries. It destroys certain forms of absolute discontinuity, such as between energy and matter, but it establishes no new ones. The point may also be put in this form: the quantum is a finite, hence a *relative*, discontinuity; it has a measurable quantity, as its name implies; an infinity of different quantities would therefore have been logically (mathematically) possible, and the series of these possible quanta is continuous.

3. *Generality*. Philosophy, like any science, deals with general characters or universals. The problem of the universal has been central in philosophy for two thousand years, but the definition of the universal as a continuum of possibilities, a view first proposed by Kant and developed by Peirce, seems without a rival as an analysis of the *formal* characteristics of the universal. That some universals imply continua is clear; inductive inquiry shows, furthermore, that all universals which seem not to be of this character are such as lack clear and intelligible meaning unless such continua are posited for them. These universals are all extra-scientific, more or less metaphysical notions, such a "reality," "essence," "experience," and the like. The technical universals of the sciences, on the contrary, and most of those of everyday life, are clearly of the continuity type. Examples: triangle, dog, goodness, humanity – all positing ideal continua of forms.

The most comprehensive or philosophical universals are then the chief, if not the sole, examples of apparently non-continuous universals, but they are the very ones whose meanings and logical status are most obscure. The remedy for this obscurity is to see in such universals references to an *all-comprehensive* continuum of possibilities, of which the narrower universals represent limited portions. The realm of essences or possibilities is then to be regarded as a single n-dimensional continuum in the sense of pure, that is non-spatial, geometry.

4. *Possibility*. The power of the conception of continuity as an instrument of philosophical analysis depends further upon the definition of this conception (in agreement with Kant and some contemporary mathematicians) as a unity transcending all discrete multitude. If one defines the universal as

the continuum of its possible instances, this does not mean that it is the instances which as a multitude make up the continuum, for the latter is defined as a principle inexhaustibly generative of multitude rather than identical with any distinct multitude. It follows that possibilities or qualities apart from actualization do not subsist as a plurality of self-identical entities ("they have no identity"); there is no set or multitude, finite or infinite, of "eternal objects," but there is an eternal creative source of qualities such that, given any two actualized qualities, there is an inexhaustible possibility of intermediaries between them. This inexhaustible possibility of the intermediaries is their continuity (a "multitude beyond all multitude"). This view amounts to a mathematical analysis of the problem of essences and of universals which is neither nominalistic nor realistic in the usual senses. It is inseparable from a recognition of the objective significance of the ideas of vagueness, possibility, potentiality, creativity, free becoming. The future is new even from the standpoint of subsistence or of essence; in no sense whatever could its particularity be anticipated or necessitated by the present. There is here a precise formulation of the principle of *emergence*.

It must be admitted that the definition of continuity here employed is still today a matter of controversy among the mathematicians. The Peircean side of the question appears to be represented by the so-called intuitionists (such as Weyl and Brouwer). From this mathematical issue, however, we must here abstract – vital as it undoubtedly is for the philosophy of Peirce.

5. *Experience: The problem of the datum.* There is a crying scandal in philosophy. This is the paradox of an extreme diversity of opinion in regard to the immediately given as such (that is to say, apparently, in regard to the obvious in its very obviousness). This diversity of opinion is explained, and in principle overcome, by the application of continuity to the alleged heterogeneity of diverse classes of data, such as colors contrasted with sounds, qualities contrasted with affective tones, awareness contrasted with its contents, and other similar divisions. All of these distinctions can be proved by the mathematically necessary con sequences of observed facts to be relative only, relative that is, to a potential continuum of qualities. The dimensions of this continuum, as can likewise be demonstrated, are most clearly revealed in the case of data which are admittedly affective, aesthetic, and (above all) social, in character. In this way, certain old issues of "idealism," "realism," or "subjectivism," will be settled finally on the basis of observed facts and their mathematical forms. The datum will be *seen* to be mental because it will be seen to be affective, aesthetic, and social in essence, and by this last token of the social it will be seen also to be objective, directly to reveal an object, though an object itself of an equally mental or affective character. Realistic idealism as social animism or direct affective community will be established by the data themselves as the sole descriptively accurate account of experience. Such an account, though in very general outlines only, was prognosticated by

Peirce, and to the present writer at least it seems manifest that a more detailed development is possible and desirable. The result would be nothing less than the reduction of the chief philosophical issues to questions of the mathematical forms *perceptibly* embodied in immediate concrete facts.

6. *Explanation and contingency*. According to the old ideal (now abandoned in physics) explanation implied causal determinism. But the actual universe as a whole remained on this view totally inexplicable, since no cause could be conceived which would imply the universe as a necessary effect. The universe as, a whole is logically contingent with respect to the realm of possibility. Explanation in metaphysics cannot then be in terms of causal necessity. The alternative to necessity is chance. Chance, however, is merely negative unless construed as free choice, or creative fiat. The actual is explicable as the progressive creation by fiat of logically contingent discontinuities out of that necessary continuum of possibilities whose being consists in the eternal unity of the creative power. This power may, according to Peirce, best be conceived through the admittedly vague conception or experience of God.

It will be seen that though synechism is a species of monism, this monism does not imply the "block universe." The future is contained in the present only as an indeterminate anticipation or potency, implicative of freedom and true novelty.

7. *The Universe*. The law of continuity is a formal principle, a principle of analysis, or a *regulative* principle. Its constitutive correlate in the concrete, its metaphysical basis and final meaning, which we have now to consider, is the principle of *social community*. As in Whitehead, the social concept on the side of concreteness, the concept of universal relativity on the side of logical structure, are the two chief clues to the nature of things. It is to be noted, however, that in neither thinker does "social" refer exclusively to *human* society.

The universe is the synthesis of the possible and the actual. The actual, in turn, is that which can be reached solely through its dynamical contact with present experience. Not otherwise can it be defined. But this implies that all actuality is organically contained in the individual present experience. The resulting organic or dynamical relativity is continuity in its existential mode. According to this, even numerical difference, individual being, is a matter of degree, as may be illustrated by the phenomena of multiple personality, and in a thousand ways.

The following are some of the chief approaches to this existential aspect of our conception:

a) Space and time are relatively concrete modes of continuity. But the only adequate account of these concepts is one couched in essentially social terms. "My neighbor is he with whom I most intimately react," and this reaction is a matter of continuity, of mutual participation with respect to feelings, is a

spiritual or social affair. Similar remarks apply to *time*. Time is the form of freedom, limited by habit, memory, and that continuity of an ideal which is constitutive of personality. Time is sympathy (social continuity) of a creative present with a created or settled past and an uncreated, partially indeterminate future. The unity of time, moreover, according to an argument presented in Peirce's *Monist* article on the "Law of Mind," is a proof of the thesis of qualitative continuity expounded above. If the succession of qualities in time involved absolute gaps, the unity of time – so Peirce argues – would be destroyed.

b) Mind-body. The only possible solution of the mind-body problem is to be found in the view of matter as "habit-ridden" mind and in the conception of the interdependence of matter with matter, of matter with mind, of mind with mind, as a bond of sympathetic rapport, as social in nature. Thus consciousness involves, in the words of Peirce, "a sort of public spirit among the bodily cells."

c) The unconscious. If to be perceived is a matter of degree, namely of degrees of vagueness and clearness of perception, then two problems are resolved at one blow: the problems of the subconscious and of the immanence of the entire actual universe in present experience This immanence, the necessity for which has been shown above, is largely in the form of faint or vague perceptions. (Compare the similar doctrines of Whitehead and Leibniz.)

d) Ethics, aesthetics, and religion. In the experience of value, whether social, aesthetic, or religious, our fundamental intuitions demand unmistakably a doctrine of the continuity or fusion of self with object, self with neighbor, self with the universe. "Losing oneself" (relatively yet genuinely) in the other is according to Peirce a literal truth of all the basic exaltations and obligations.

The essence of reason – generality – the essence of emotional life – sympathy – are thus seen to coincide formally in the element of continuity. The law of thought springs from a kindred law of life, the structure of intellect from the organic and social unity of feeling and purpose.

e) Evolution. The explanation of diverse entities in terms of a common origin is possible only if the diversity of the elements is relative, or in accordance with the logic of continuous variation. The theory of sports or mutations does not conflict with this, any more than the quantum theory, and for the same reason, the discontinuity referring in both cases to the actualization of forms, not to their possibility. *All* actuality involves arbitrary discontinuities limiting the pure continuum of the possible.

By considering all classes whatever from the standpoint of continuity, Peirce is enabled to carry the evolutionary theory radically further than other thinkers had done. Even laws, he held, are evolutionary products. So are the sensuous qualities which form the contents of experience. These two conceptions, of the evolution of feelings, and the evolution of laws as habits of

feelings, are surely among the grandest speculations of evolutionary philosophy.

In conclusion, the "law of continuity" seems worthy to be characterized as the most scientific result which metaphysics has yet attained. It unites unparalleled precision, great cogency, and absolute universality of relevance. There is, it seems to me, simply no problem of philosophy which does not demand for its clear formulation what Peirce called the language of continuity. All the more general technical issues of the past are superseded by this central issue of the logic of classes and in dependent substances, on the one hand; and the logic of qualitative continuity and existential relativity, on the other hand. As the former, in its most tenable aspect, is merely an ill-defined special case or arbitrary limitation of the latter, and as the logic of modern science and – though less distinctly and consistently – of classical metaphysics) is one of continuity, the decision of the issue in this sense may reasonably be expected.

What would result from the general acceptance of this program? "Were I to attempt to expound," Peirce has said, "the beauties of the idea of continuity, I must say, in the language of Matilda, that the tomb would close over me ere the topic were exhausted." The tomb has closed over the author of these words, but let us suppose that continuity, the word of all modern science, and, unconsciously, of the great metaphysicians, should become the word also of all future philosophy; let us suppose furthermore that to this insight should be added that other Peircean doctrine that in the formulation of *concepts*, that is, of publicly controllable meanings, the crucial continuities are those of purpose and behavior, would not such a pragmatism form the basis of a new intellectual civilization? For continuity is a conception of geometry; the "law of continuity" therefore means that the formal structure of concepts is identical with the subject-matter of pure geometry, *is* geometry. An element of unhoped for rigor and precision thus comes to the aid of the otherwise all too vague and flexible conceptions of behavior and social purposiveness, whose concreteness on the other hand admirably supplements the sheer emptiness, taken by themselves, of the geometrical forms. That a metaphysics or cosmology can be developed on such a foundation has been indicated. The relevance of such conceptions to the problems of life and value may likewise be inferred.

Yet two points may be mentioned specifically: the practical importance of the maxim that every real question is to be treated as a question of degree and not of some absolute principle opposed to its opposite; and the advantages for ethics of a scientific demonstration of the completely social character of all existence, and hence of the fundamental purposes of life. As for the effect upon psychology, that key science of the future, its entire working logic – at present open to such bitter attack – would be transformed, and the problems of sensation, attention, abstraction, will, aesthetic feeling, and the

rest, would be seen in a new light inviting and facilitating experimental verification and control.

Yet even so, one would not have exhausted the resources of the philosophy of Peirce. He was a technical innovator such as had not been seen for more than half a century – in a certain sense, even, such as had not thitherto been seen. Philosopher-scientists there have been doubtless – a few supreme intellects – with greater inborn capacity than need be supposed in the case of Peirce. But, if one considers the incomparable superiority of the science of his day over that of all preceding ages, and adds to this his immense range – unique among his contemporaries – of technical training and achievement, one will, I am persuaded, find himself driven to conclude that so much strictly scientific knowledge and power, together with so much philosophical learning and originality, had never, perhaps have never, been united in one human brain.

CHARLES PEIRCE'S GUESSES AT THE RIDDLE

Ernest Nagel. "Charles Peirce's Guesses at the Riddle." *Journal of Philosophy* 30.14 (6 July 1933): 365–386, 31.7 (29 March 1934): 188–190, 31.21 (11 October 1934): 582–583, 33.4 (13 February 1936): 107–109.

Collected Papers of Charles Sanders Peirce. Edited by Charles Hartshorne and Paul Weiss. Cambridge: Harvard University Press. Vol. I, 1931. Pp. xvi + 393. Vol. II, 1932. Pp. xii + 535.

With the publication of his *Collected Papers* by Harvard University a measure of justice is being done to Charles Peirce, long neglected except by a select few students. Unfortunately, the handsome volumes of this edition can not undo the damage which both Peirce and philosophy have suffered when he was not permitted, except for a brief period, to receive the intellectual and literary discipline which regular university teaching would have given him. His was an erratic temperament, as his writings amply testify. His conception of philosophy was architectonic, and he tried to write it in a grand manner; but most of the hitherto unpublished material which has appeared thus far is obscure, uneven in quality, and, in spite of the best efforts of his editors, unsystematic. As he himself remarked in 1903, "All that you can find in print of my work on logic are simply scattered outcroppings here and there of a rich vein which remains unpublished. Most of it I suppose has been written down; but no human being could ever put together the fragments. I could not myself do so." It is not surprising, therefore, that the writings in these first two volumes which are best from the point of view of clarity, consistency, and organization, are the articles published during his own lifetime.

Until all the ten volumes will have been published it is impossible to evaluate adequately even the first two. Their contents will suggest, to any one familiar with the literature of the last quarter-century, many of the central ideas of better-known writers. It is easy to find something of Husserl, Whitehead, Santayana, Wittgenstein and the logical positivists, Hilbert, Brouwer, and others, in the hints thrown out by Peirce, but left undeveloped. But whether these "anticipations" can legitimately be read *out* of Peirce, instead of read *into* him, only the later volumes will perhaps definitely decide. It is not impossible that he may become everything to all men, and that

rationalists and empiricists, naturalists and idealists, realists and nominalists, may all read him for support as well as stimulation. Peirce was often his own audience,[1] and he could afford to be voluminous, repetitious, sketchy, and obscurely subtle. But to others it is not always evident what value much of his analysis has for clarifying problems of philosophy or science. His reader gets an impression of someone packing and preparing for an important tour, but who somehow never crosses the gates of his own familiar city: we are shown the itinerary and given glowing promises of what is in store for us, but alas! too frequently the manuscript breaks off just before the train is scheduled to leave.

Not even a complete summary can be given, in brief compass, of the contents of these volumes. This review must confine itself to a statement of just three important themes, and the interested reader must be left to examine at first hand many of the interesting variations which Peirce embroiders upon them.

I

The Peirce who is familiar to readers of his published writings is usually the mathematical logician and student of scientific method. But his scientific interests seem to have been subordinate to a far-flung metaphysics, and the substantial part of Volume I is devoted to an analysis and a speculative use of the categories. He desired to draw up a list of fundamental categories such that for a long future the intellectual achievements of man would appear simply as corroborative details, and one of his earliest published papers was already concerned with this task. Unfortunately, Peirce had a fondness for trichotomous divisions, and so he recognized just three fundamental categories: Firstness, Secondness, and Thirdness. But Secondness is analyzable into two species, the second of which is again divisible into two species, and so on; while Thirdness is analyzable into three kinds, the second of which is divisible into two varieties, and so on, and the third of which is divisible into three varieties, etc. His thought appears in a very artificial form indeed, although he had enough sense of humor to see how crack-brained his triadic scheme must appear to the general reader (1.364).[2]

Peirce has not definitely stated what status he assigns to the categories. But they are frequently proposed as the directly apprehended logical simples into

[1] He supplied one manuscript with the following heading: "Notes for a Book, to be entitled 'A Guess at the Riddle', with a Vignette of the Sphinx below the Title. And this book, if ever written, as it soon will be if I am in a situation to do it, will be one of the births of time."

[2] The references are to volume and paragraph.

which the complexity of whatever is presented may be analyzed. For his object is to establish a science of phaneroscopy (phenomenology) which would describe the total of whatever is present to the mind in any way (phaneron), irrespective of the "realities" to which the phanerons correspond or of their physical and psychological conditions (1.287).[3] Now the study of the phaneron, Peirce claims, shows it to contain three indecomposable elements or aspects, which are the three categories. But he was careful to point out that these elements are not *existentially separate*, and that their analysis consists only in tracing out the relations between features isolated logically (1.294). The elements of the phaneron are indecomposable, because they show no differences in internal logical structure, although there are differences in the structure of their possible compounds (1.288, 1.291). The categories seem to be, therefore, factors continually present in all experience (1.134), and indissolubly intertwined with one another. We may *distinguish* the factors from one another, but we can not, even in imagination, *dissociate* them from one another or from other conceptions. We may indeed *prescind* or *suppose* some from the others in the same way as we prescind or suppose space from color (1.353); but we must never regard them as atoms out of which anything is constructed, since they are always only distinctions in everything presented (1.286).

Although the categories primarily characterize the phaneron, Peirce also regards them as representing congenital tendencies of the mind, and admits that so far he agrees with Kant. But he makes a careful study of the facts in various fields in order to confirm the pervasiveness of three modes of being (1.374); for he regards the list of categories as "a table of conceptions drawn from the logical analysis of thought and regarded as applicable to being" (1.300). It is difficult to evaluate his performance, since the analogies he finds between features in different subject-matters are very tenuous, the argument is often *post hoc*, and he himself points out in one case at least that the categories he finds in one domain do not correspond precisely with those in another (1.452). He uses (and thereby abuses) propositions in the general theory of conics to illustrate fundamental metaphysical distinctions, and the outcome is very mystifying metaphysics indeed (1.362). Finally, it must be remembered that Peirce admits his triad of categories does not exhaust all the categories (1.525), so that there is reason to suppose that his predilection for trichotomies was nurtured by his studies in the logic of relations; although

[3] This approach has many obvious affiliations with the "presuppositionless" studies of essences by Descartes, Husserl, and Santayana, although in the light of Peirce's devastating critique of the Augustinian-Cartesian philosophy in his earliest papers, too much can not be made of this similarity. And after the nature of Thirdness has been discussed it will be seen how full of presuppositions Peirce's analysis really is.

what the intimate connection is between these studies and his metaphysics Peirce leaves the reader to guess at random.

Let us turn to the categories themselves. The Category of Firstness indicates the aspect of freshness, life, freedom, variety, and spontaneity in the phaneron. Thus it would seem that Firstness presents the phase of atomicity, specificity, or sheer quality in experience. A quality is just what it is, and in its sheer immediacy is utterly disconnected with any other quality. On the other hand Peirce regards Firstness as a "pure nature" or quality to which embodiment and localization are essentially foreign (1.303). A quality is eternal, independent of time or of any realization (1.420); it is simply a "may-be," whose nature is that it *might* be a specific moment in a phaneron. Nevertheless Firstness is not a general or universal, since to be a universal involves reference to embodiment and localization (1.304).

It is not easy to reconcile these various characterizations of Firstness. Peirce seems to shuttle back and forth between regarding Firstness as the absolutely specific, immediate quality in the phaneron, as a determination which is not an "abstract suchness" (1.303, 1.306) on the one hand; and on the other hand, regarding Firstness as pure potentials, involving a variety and spontaneity which "is not definitely there," mere "may-bes" not necessarily realized (1.373). He thus alternates between conceiving Firstness as being simply a distinction within the phaneron, and conceiving it as a disembodied but substantial essence. Firstness is at the same time a mere "possibility" and the element of spontaneity; it is declared to lack generality, and also to be of the nature of a general, capable of further determinations (1.447). Peirce himself acknowledged that "possibility" was a misnomer for firstness, since it mistakenly suggested a relation to what exists (1.531). But he adds a final touch to these confusions when he identifies Firstness or quality, not with immediate, physically inefficacious quality, nor with an abstract isolated possibility, but with the *power* bodies have of determining future manifestations of inefficacious qualities (1.422). Firstness is then conceived as a dynamic relation, and so an element of law or regularity (Thirdness) is introduced into what started out to be the element of spontaneity.

Further difficulties arise when the connection of qualities with feelings is examined. A feeling for Peirce is an element of immediate consciousness, a quality of it which is not an event (1.306); and a quality in general is something which is vivid and conscious (1.357). There is thus a tendency to identify qualities with feelings, and so it is only a short step to impute feelings to whatever has qualities, for example, to inorganic matter. Indeed, "dead matter" can excite feelings in us, only because dead matter isn't dead at all (1.311). Consequently, Peirce must be included among those who use with abandon an uncritically formulated principle of continuity. Like can come only from the like, and so the qualities which humans enjoy are communicable and find their counterparts in non-human situations. "I am confident,"

Peirce declares, "that a bull and I feel much alike at the sight of a red rag" (1.314). Far be it from me to question this assertion, especially since I do not know what it means. I do not see, however, how it and similar statements are reconcilable with Peirce's logical pragmatism. He himself declared that in immediate experience there is no *knowledge*, so that if Firstness indicates the element of spontaneity, every description must be false to it (1.357). And I think this is true, because of that which is wholly immediate nothing whatsoever can be said, for the simple reason that the wholly immediate is not the subject-matter for any saying.

We turn to the second category. Secondness indicates the element of brute fact, struggle, actuality. It points to fact, within which distinct elements stand in opposition to one another, for all existence is always a matter of blind force. Facts are determinate with respect to every character. They involve physical things acting upon one another *hic et nunc*; 'these physical things *are* the sum of all the consequences of their so acting here and now. But Peirce points out that the individual mode of behavior indicated by Secondness is not *determined* by any law (1.440); a stone falling here and now is not *made* to do so by any law of nature (1.323). Hence the proposition that every event is precisely determined must be abandoned, since it is only approximately true (1.402).

Secondness thus points to the element of contingency, of something "accidently actual" in the phaneron (1.427). Peirce would have been sympathetic with recent attempts to revive causality as a distinct category not analyzable into uniform succession (1.325). For Secondness denotes a necessity which is natural, and also unconditional, forceful, ultimate, a quality of operative events. At the same time, Secondness points to a radical indeterminism in the behavior of nature, so that Peirce anticipated in general outline the statistical interpretation of natural laws.

Unfortunately, but perhaps inevitably, Peirce's discussion of Secondness is almost entirely in anthropomorphic language. We may cite as examples his characterization of fact as something which "fights its way into existence; for it exists by virtue of the oppositions which it involves" (1.432); and "the existence of facts consists in fight" (1.435). This anthropomorphism Peirce often regards as a virtue, and once again a principle of continuity is employed to read strife, struggle, effort, which are features of human life, as generic traits of all nature. But where shall one draw the line – why not read desire, revulsion, love, into every nook and cranny of the world as well? Peirce, like many contemporary thinkers, did not hesitate at times to draw just such conclusions. Now the world may, indeed, be populated with many more qualities than we ordinarily suppose. But why should we uncritically admit them, at the behest of a dubiously stated principle of continuity? Why should we overlook the fact that the qualities we experience are functions, in part at least, of the interaction of our own bodies with the rest of nature, and that

they can not therefore be imputed to segments of the world where such interaction is not going on?

An equally serious shortcoming is Peirce's failure to analyze the meaning of contingency, and to state how he conceives an event to exhibit a contingent aspect and also to illustrate a uniformity. Is the contingency of an event an absolute character of it, an m mediate quality of a *hic et nunc* operation; is it a relational character, so that an event has a contingent aspect with respect to one set of circumstances but not to another set; is it synonymous with the sheer plurality and variety of things; or is it all these things and something else besides? This problem is especially important for Peirce, because as we shall see, uniformity is taken by him as a temporally derivative character of events.

Let us examine the final category. The category of Thirdness introduces the element of determination by law. A law is the mode of being which consists in *future* facts (of Secondness) taking on determinate general characters (1.26); a law is how an endless future must continue to be (1.536). Thus, Thirdness involves the idea of something general, which can not ever be completely actualized and so refers to an indefinite future. Thirdness or law, according to Peirce, is akin to thought; it can be produced and grow, it can be communicated and is general. It addresses itself to two realms: as general, it concerns itself with the realm of possibility or quality; as factual, it refers to the actual world (1.420). Since Thirdness is involved in all communication, the correct analysis of the category leads inevitably to the study of the nature of signs. But we will examine this aspect of the matter in the next section.

At this point, let us see the use Peirce makes of his categories in his cosmogonical speculations. According to him, every sound metaphysics must be evolutionary. This dictum is based largely on the further dictum that what needs to be explained is not the variety, freshness, and unpredictability of things, but the uniformities which they exhibit. Uniformity must be "explained" by showing how, out of a primal spontaneity, together with a *tendency* in the flux to take on habits, laws or habits have *evolved* (1.175). In a sense, therefore, Thirdness is not as "ultimate" a category as Firstness, since regularity grows out of pure chance or Firstness (1.407). In the infinitely distant past there was no law, only chaos together with a tendency toward uniformity or the elimination of indeterminacy (1.409). Hence the three active elements in the universe are chance, law, and the tendency for things to take on habits.

Is it possible to make a coherent scheme out of all this? In the first place, let us recall that the categories should be regarded as *distinctions* within the phaneron, not as active elements out of which whatever exists is to be constructed. However, if we also recall that phaneroscopy has nothing to do with the question of how far the phaneron corresponds to any reality, what meaning shall we assign to Secondness and Thirdness which specifically

involve reference to the actual world? Can anyone, least of all Peirce, maintain that the nature of law is to be learned independently of the operations of "real" beings and of the use of the discursive methods of the sciences? Indeed, if there is nothing in immediate consciousness except feeling or quality (1.317), how can the phaneron exhibit elements of Secondness and Thirdness? Peirce himself declares that law unrealized is merely a pure first, a quality possessed, and is not a "genuine" law.

Secondly, is the idea of law as something active anything other than Plotinian and Schellingian poetry? It is true that Peirce calls Thirdness a law only when we, contemplate it from the outside, while if "we see both sides" it shows itself to be akin to thought (1.420). But change of terminology does not always solve a difficulty, and Peirce does not show how the radical indeterminacy of fact is compatible with the *activity* of thought or law in determining what future facts are to be.

Thirdly, what is to be said for the dictum that uniformities, and only uniformities, require explanation? Is it not patent that we sometimes seek to explain a regularity and at other times the lack of regularity? For what, anyway, is an explanation? Is it not the case that we "explain" an event or law when we exhibit it as an element in a more comprehensive order or uniformity? Thus we explain why a glass breaks when hot water is poured into it, by showing that *types* of relations, like the flow of heat, the elasticity of a substance, and the unequal expansion of a substance, are exhibited in the explicandum. These types, if they are to explain, must be pervasive modes of behavior, must be what are called "regularities." Peirce himself is compelled to take note of them. He can not possibly get order and connection by simply taking them as *growths* from a primal chaos; he must take for granted some form of order, e.g., a tendency in things to take on and conserve habits. For the hypothetical chaos is completely unintelligible, and can not be the explanation of anything. One may explain a specific law by showing it to be the consequence of a more inclusive order. But one can not explain order as such, since it is the principle of explanation of everything else. What order we take as primary in any inquiry depends upon the state of our knowledge and the demands of the problem; *some* order we *must* assume, just as *some* plurality *must* be taken for granted if anything is to be explained. Peirce was motivated in his cosmogony by a bias toward a spiritualistic interpretation of the cosmos, and by an understandable reaction to philosophies of his day which attempted to derive the variety of things from a primal homogeneity. The moral is that it is just as much a mistake to deny an ultimate specificity and variety, as it is to deny an inexpugnable order. It is instructive to compare Peirce with Spinoza. Both recognized nature to possess a structure and also to contain an inexhaustible variety. Peirce chose to emphasize the latter and to regard the former as derivative. But I think Spinoza was both sounder and wiser when he included in Part I of the *Ethics* Prop. 15 as well as Prop. 28.

Finally, one must seriously question Peirce's facile reduction of laws of nature to "habits." No doubt there is an analogy, often a fruitful one, and no suggestive hypothesis should be neglected. But do we know the nature of human habits so well that we can pretend to throw light on the nature of laws by using the former to explain the latter? What real evidence is there for Peirce's assumption that natural laws are like habits which human beings take on and occasionally drop? It is true that almost all our scientific terms, even the most neutral ones, are infected with meanings carried over from the specifically human scene. But this should not be taken as a license to exercise one's speculative fancy and so regard processes in all parts of nature as simply human processes writ large. The issue is not between affirming immutable laws of nature and affirming the contrary. The flux is what it is, and why should a naturalist on *a priori* grounds deny anything of it? But whatever the flux is, the issue is to examine any allegation concerning it with scrupulous care, in philosophy as well as in science. And if it is alleged that laws grow and change, while at the same time laws are not identified with any segment of the flux, especial care should be taken to determine the sense in which laws "change," considering that change is taken as a fundamental character of the flux itself.

II

Although the triad of categories is a persistant melody running through most of Peirce's writings, many of his doctrines can be understood better in connection with his theory of signs. The magnificent series of papers in the *Journal of Speculative Philosophy*, in which he broke with the Cartesian tradition dominating modern philosophy, was inspired by his recognition of the function of signs in thought. Like Aristotle, Peirce was impressed by the fact that language is the medium in which the rationality of the world becomes expressed and communicated; and he went so far as to say that "the woof and warp of all thought and all research is symbols, and the life of thought and science is the life inherent in symbols" (2.220). "My language," he declared, "is the sum total of myself, for the man is the thought. The identity of man consists in the consistency of what he does and thinks, and consistency is the intellectual character of a thing, i.e., is its *expressing* something." Representation or the operation of signs (mediation or Thirdness) is therefore one of the fundamental categories, and to its study Peirce devoted his best energy.

Peirce's ideas on signs are the most difficult and obscure of all he set down on paper. Only a meager outline is here attempted. Anything whatsoever (e.g., physical object, image, quality, thought) may be a sign, so that signs differ from one another in several important ways. But in any case, every sign involves a triadic relation. For in every case where a sign functions, there is

first, the sign with its own material quality; secondly, there is the object *of* which it is a sign, and which it represents in some respect (the *ground*); and thirdly, there is the thought to which it is addressed, the interpretant *to* which it is a sign. In Volume II Peirce discusses each one of these three aspects of the sign, each aspect yielding three divisions.[4]

And first, when we attend to the material quality of signs, we find three types: a sign may be a pure quality or possibility, something which as a pure quality is disembodied, even though it can not actually function as a sign until embodied (a *qualisign*); or it may be an actual existent, a physical thing or event (a *sinsign*); or finally, it may be a general law, rule, or habit (a *legisign*). Every sinsign clearly must involve qualisigns, while every legisign functions through sinsigns which are instances or "replicas" of it. Thus, in one sense, each time "three" occurs on a page there is a distinct word, each being a sinsign; but in another sense, these distinct sinsigns stand for the very same word (legisign), which is a general rule or convention for the production of sinsigns. All conventional marks are signs not because they can be seen or touched, but because they are replicas of a type which signifies *through* its instances (2.244).

Secondly, when the sign is studied with respect to the relation between it and its object, the following three types are found: a sign is an *icon* when it refers to an object because of its own intrinsic features, which nevertheless it possesses in common with its object (e.g., a diagram or picture); it is an *index* when it is really (dynamically) affected by its object (e.g., a street cry, the rolling gait of a man as a sign of his being a sailor, or a weather-cock); it is a *symbol*, when it operates to be interpreted by virtue of a law or association of general ideas (e.g., a proposition, all conventional signs). Peirce regarded this as the most important division of signs. The only way we have of communicating and thinking, according to him, is by means of direct or indirect use of icons (2.278). But icons generally function as constituents of indices, which in turn are constituents of symbols; and symbols, being general, involve laws referring to the indefinite future, and so require legisigns and sinsigns to function (2.293).

Thirdly, when the sign is examined with respect to what its interpretant understands it to represent, the following three types are found: when the sign is taken as representing a kind of *possible* object or quality, when it represents an object merely with respect to its characters, it is a *rheme* (in modern terminology, a propositional function); when it is taken as a sign of actual existence, when it represents its objects with respect to the actual existence of the object, it is a *dicisign*; when it is taken as a sign of law or regularity, it is an *argument* (2.252).

[4] In a later volume he will distinguish ten trichotomous divisions, giving sixty-six independent classes of signs.

If we combine these three sets of distinctions in all possible ways, we get twenty-seven (i.e., 3^3) classes of signs, only ten of which are independent. Peirce discusses them with great subtlety. We can not report his analyses, but turn instead to some of the applications he makes of his studies on the role of signs in discursive reasoning.

(a) *The nature of meaning*. It is not intended to add here another specimen to the sixteen meanings of "meaning" captured by Ogden and Richards. I only wish to point out that most analyses of meaning have gone off the track because they identify meaning with some essence, image, or thought, instead of studying the structure of the situations in which meanings occur. Peirce's discussion of signs should make us aware that "meaning" is a triadic relation involving a sign, its object, and its interpreter, so that an exclusive concentration upon one of these terms must of necessity yield an inadequate analysis of the nature of meaning. It may be thought that the specific introduction of the interpreter as a factor in the analysis of meaning, involves the introduction of irrelevant psychology which will only becloud a very beclouded problem. But quite the contrary is the case. For this analysis isolates the different factors in a meaning situation, allows us to explore the general conditions under which signs may adequately represent their objects irrespective of any specific interpreter, and then emphasizes the ineradicable role of the interpreter. Thus we can discover that a sign must be a "logical map" or icon of its object if it is to represent it adequately; and we can also consider the social factors which enter into the activities of the interpreter which determine how he interprets signs, without however altering the validity of the first analysis. Meanings are not qualities or essences; they are the structure of certain situations in which such triadic relations are exhibited.

Consider, furthermore, the problem as to the nature of propositions. A proposition is sometimes identified with judgment, understood as a psychological act; sometimes with a fact or state of affairs; sometimes with a substantial, non-temporal, non-spatial entity or essence; sometimes with a sentence in all its particularity. Peirce, on the other hand, is able to avoid both the hypostasis and the psychologizing of propositions by analyzing them as *dicent symbols which are legisigns*. Hence a proposition is a sign, and requires a three-fold reference: it is a sign which is connected with its object by an association of general ideas; it is dynamically connected with its object if it is true, and is *interpreted* as representing a situation *located* in the realm investigated; and it also has a determinate material quality, determined by a general rule or convention, so that "*cogito*" and "I think" stand for the same proposition.

It is also relevant to mention in this connection that most of the recent work in symbolic logic has devoted exclusive attention to the iconic feature of signs, and has neglected their very important *indexical*, *symbolical*, *and argumentative* aspects. The dissatisfaction which many philosophers have felt with symbolic logic may perhaps be explained on this ground. And it is not too

much to say that an adequate philosophy of logic will not be achieved until the neglected features of signs receive a complete study.

(b) *The doctrine of fallibilism.* Every sign addresses itself to some thought or interpreter, and this in turn, according to Peirce, is a sign, which must address itself to another thought, and so on without limit. This indicates the nature of all discursive thought, and it is largely for this reason that he denied knowledge to be immediate apprehension. All cognition requires mediation, interpretation, and reference to an indefinite future. There can be no absolute finality or complete certitude, since the process of interpretation is an unlimited one. The method of science is self-corrective. We can not doubt all things at once; but without being dogmatic or skeptical, we can construct hypotheses, submit them to empirical tests, reconsider the hypotheses and tests in terms of other hypotheses and observations, and so on endlessly. Thus while the sciences aim at exactitude, universality, and complete certitude, these are ideal limits which they can never reach, and which it is suicidal for them to claim to have reached. All our knowledge, in the natural sciences as well as in mathematics, is fallible.

The import of this doctrine will be clearer if we bear in mind that the complete certitude Peirce denies we can attain, is *not* a psychological state of strong conviction, but is a complete *logical* ground for the propositions we assert. The following considerations will bear this out.

(1) Peirce makes clear that it is the fallibility of *discursive thought* which he is asserting, and that he is not denying the immediacy of direct experience. Kant's sharp distinction between observation and reflection he believes is mistaken, because all significant observation involves interpretation, so that reasoning does *not* begin *after* observation is over (1.35). The consequences of this criticism, as everyone knows, are momentous for the theory of science. And he has a crushing retort to those who claim absolute certainty for the objects of direct experience: "Direct experience is neither certain nor uncertain, because it affirms nothing – it just is.... It involves no error, because it testifies to nothing but its own appearance. For the same reason, it affords no certainty" (1.145).

(2) The claim to infallibility is only a hindrance to inquiry, since what we want to know concerning any proposition is whether it is well supported by evidence. The claim to finality, however, confuses the question of the logical value of the evidence with the question as to the psychological certitude we may possess. Accordingly, since the first rule of reason is "Do not block the way of inquiry" (1.135), we may dismiss as obstacles the claims that we have absolute certitude, that there is something we can never know, that something or other is basic or absolutely simple, and that some law or other has received its perfect formulation.

(3) It is a very crude analysis which declares that things are sharply cut off from one another, like the traditional pictures of atoms as billiard balls. The

contrary is the case, according to Peirce, for "all things swim in continua." Our concepts, too, shade off into penumbral regions of indeterminacy, so that our knowledge "swims in a continuum of uncertainty and indeterminacy" (1.171). Hence the "laws of nature" must be interpreted as describing the approximate behavior of large groups, and do not describe without serious qualifications the behavior of their individual members (1.156).

(4) A pragmatic theory of meaning involves an implicit reference to the future in every judgment about matters of fact. To call a piece of stone *hard*, is to *predict* how it will behave and what effects it will have in the future (1.615). Hence every present judgment is subject to correction, since it involves an endless series of verifications. Science is therefore not so much a body of established truth, as a diligent search or process of inquiry into truth (1.44).

Against the doctrine of fallibilism many thinkers will no doubt raise the objection that we can not be said to "know," unless what we know is in fact the case. Anyone claiming to "know" that the earth is flat, it will be said, claims what is false, for we could *know* that proposition to be true only if the earth were indeed flat. Hence, if there is such a thing as knowledge, it must be absolutely certain; on Peirce's view, however, it will be urged, we may have opinion and belief, but never authentic knowledge, since knowledge is not subject to revision. To this objection there is only one reply. Knowledge so defined that when we have it we can not possibly be in error, is the ideal goal to which we strive; but it is Peirce's claim that we have not yet anything to illustrate such a knowledge beyond every possible doubt. It may well be that certain propositions claimed as knowledge will never be significantly challenged. The indubility that attaches to such propositions comes, however, not from any analysis of the nature of knowledge nor from a psychological sense of certitude, but from the fact that they are supported by evidence overwhelming logically. Nevertheless, in all discursive thinking there is always the possibility that we are mistaken in what we allege to know. There are therefore no ultimate first principles intuitively reached which is the bed-rock of all certitude. There is only science as a self-corrective process, steering midway between a stultifying skepticism and an unimaginative dogmatism.

(c) *Logic and mathematics*. But what does Peirce do with logic and mathematics, it will be asked. Can he successfully extend the principle of fallibilism to apply to them? The attempt to do so is indeed one of the most interesting features of Peirce's writings on logic; and it merits careful study because he was bitterly hostile to the psychologizing logicians of his day.

Logic in its broadest sense is understood by him to be general semeiotic, or the science of what must be and ought to be the nature of true representations or signs (1.444, 1.539). Logic is thus inextricably related to language. Corresponding to the three-fold nature of signs, it has three departments: *critical logic*, the theory of the conditions for the *truth* of signs; *speculative*

grammar, the theory of the nature of signs in all their aspects; and *speculative rhetoric*, or the theory of the conditions of reference of signs to their interpretants (2.93). The content of speculative grammar has already been indicated; and apparently Peirce wrote nothing systematically on speculative rhetoric, in spite of his belief that general methods could be stated for attacking the solution of problems (2.108). There remains to indicate something concerning the nature of critical logic.

The task of critical logic is the classification of arguments with respect to the form of their constituent propositions and the frequency with which true premises of a determinate type yield true conclusions. Each argument requires a *habit* of inference, which when formulated is the leading principle or canon of that *type* of argument. These habits are *general* since they refer to an indefinite future, and in a determinate class of arguments commit us to few or no false conclusions (2.148, 2.446). Some leading principles are perfectly general or formal: they are involved in every set of premises, and are the logical principles *par excellence*; others have a more restricted generality, and are material principles (2.466, 2.589).

The consequences of taking leading principles or generalized habits as the basis for valid inference are many. It enables Peirce to supply an objective, matter-of-fact foundation for all inference, and so indicate the relevance of material considerations in formal logic. The naturalistic strain in him shows itself at its best in his discussions of the metaphysical grounds of logical canons of inference (2.710 ff). It also enables him to treat in a unified manner both necessary and probable reasoning, since the former is a limiting case of the latter when the leading principles employed have relative truth-frequencies whose values are always unity (2.696). It permits him to do justice to the purely mechanical element in inference, and admit that logical machines perform inferences even though they do not think (2.59). And it permits him to avoid a crude empiricism with respect to logic, by associating the canons of deductive or explicative inference with the analysis of *signs*, so that he can retain his naturalism and still admit that the experiential element in logic is all but nil (2.65).

Nevertheless, not everything that Peirce says about inference is crystal clear or consistent. There remains an unbridgeable gap between probable and necessary reasoning which he reluctantly admits when he asserts that a class of arguments whose relative truth-frequency is unity, does not *therefore* belong to the class of necessary inferences (2.369). And when he asserts that the process of substitution, so vital in formal reasoning, is non-inferential, simply because the propositional forms employed have no *specific* meaning or reference, he exhibits serious limitations in his understanding of the distinctive marks of inference (2.496).

Let us turn, however, to his analysis of deductive reasoning and to the incidence of the doctrine of fallibilism upon it. We can best do this in

connection with his discussion of mathematical reasoning. Peirce was profoundly influenced by F. A. Lange's *Logische Studien* and always maintained that both logic and mathematics were "observational sciences." This *aperçu* depends on recognizing that all reasoning is by means of and upon signs. In mathematics, for example, we construct a diagram (i.e., any complex sign) according to a general rule; we observe relations between parts of the diagram not stated explicitly by the rule; we show that the diagram is a fair sample of all the diagrams determined by the rule, so that these relations hold always (or at least in a certain proportion of cases) for any such diagram; and finally we state these relations in general terms as the necessary (or probable) conclusion of the investigation[5] (1.54, 1.66). In the sense, therefore, that explicative reasoning is diagrammatic, it requires observation, since we must construct diagrams, at least in imagination, and *observe* them (1.240); and it will be seen that the discussion does not depend on the status of the controversy between opponents and defenders of "imageless thinking." Hence, mathematics is no more infallible than other positive sciences of observation, and every mathematical inference is accordingly a matter of probability (1.248, 2.192) even though it may be beyond every reasonable doubt.

Whatever else may be said of this extension of the principle of fallibilism to mathematics, Peirce has rendered a service in pointing out how insecure logically are all claims for the self-evidence of mathematical propositions. The history of logic and mathematics amply bears out the substance of Peirce's warnings against an arrogant infallibilism; it shows that here as elsewhere, general principles are but slowly apprehended, require to be carefully tested out, and the limits of their application are never completely free from doubt. Nevertheless, there is a good deal of confusion in his contention that mathematical reasoning is "probable." His illustrations indicate that he means by that characterization simply that we, and thousands of others, may have blundered in adding a column of figures or in deducing the consequences of a set of premises. But there is an important difference between the assertion that "7 + 5 = 12" is only probable because *we* may have erred, and the assertion that "all men are mortal" is probable because the evidence from biochemistry and physiology is incomplete and because there is a reference to a contingent future. In the first case we are dealing with the connection of relations having the utmost generality possible and not subject to change; in the second, the subject-matter is a segment of an incompletely determined flux.

[5] In this emphasis upon the role of diagrams Peirce anticipated much of the mathematical philosophy of Hilbert, although his motivation is clearly different. Like Hilbert, he denies that mathematics ever requires the aid of logic (1.247, 2.191), although this dictum seems to depend upon his taking "logic" in this context to be a science of *fact*, and not the formal science of consequences of hypotheses.

And Peirce himself, as we shall see, stood out firmly against confusing probability with ignorance.

Peirce's views as to the nature of mathematics are amazingly up to date. He saw clearly that pure mathematics is a hypothetico-deductive science, that it does not make categorical assertions about what exists (1.53), and that all *a priori* arguments about matters of fact are just rubbish (2.137). But he did not always see the implications of these insights. Thus he thinks that "two straight lines can have only one intersection" is an evident proposition (1.130), and that the postulates of geometry are only approximately true (1.131). He can not therefore be regarded as having anticipated Poincaré and Duhem in their profound studies on the connection between applied mathematics and physics.

(d) *Nominalism*. It is clear from what precedes that Peirce could not agree with those for whom the only mode of being is that of individual objects which crowd out a place for themselves by sheer force. Such a view he characterized as nominalism, and he called himself a realist because he recognized the mode of being of law or Thirdness.

Peirce takes great pains to make clear that by a law or universal he did not mean a "thing" or a "particular." When a man believes that the property *hardness* is not invented by men as the word "hard" is, he says, "but is really and truly in the hard things and is one in them all, as a description of habit, disposition, or behavior, *then* he *is* a realist" (1.27n). The mode of being a law consists in the fact that future acts will take on a determinate general character. Whatever is general is something which is the *object*, not the creature of thought. And it can not be identified with any finite set of particulars, since "its being is in the instances which it will determine" (2.249).

Peirce's realism is thus of the "moderate" kind. Universals or laws are not capable of localization in space and time, not something added to the particulars so localized. They are the modes of behavior and the relations between modes of behavior of things in space and time. In spite of his flirting with the idea of "pure possibilities," in spite of his saying that a typical mathematician must be a Platonist for whom the universe of "actual" existence is but an arbitrary locus in the eternal, the substance of his reflections on universals is to tie them indissolubly to the flux of things. The supposition of universals with no reference to the flux is as meaningless as the supposition of a flux which did not embody universals (2.330).

But there is no doubt Peirce was not always faithful to his best insights into this matter. Most puzzling is his philandering with the idea of final causes, so that he sometimes thinks of laws and ideas as operative and efficient. Thus, he declares that when an idea is communicated "it had caused something to happen in your brain" (1.213); that while heredity is a law and not a force, it "like other laws doubtless avails itself of forces" (1.215); and that "every general idea has more or less power of working itself out into facts" (2.149). These expressions may be simply metaphors. It is, however, a metaphor

which strangely persists in much of the discussion of Thirdness, and must make Peirce's readers question the integrity of his realism. For to endow laws with efficacy is to particularize them into things, and is an invitation to the nominalist to ask his unanswerable "When? Where?" Nor is the reader's doubt allayed when Peirce permits himself to say that the number system is our own creation, and that mathematical reasoning holds simply because it deals only with the creations of the mind (1.149, 2.192). It is a high price, even for fallibilism, to explain the unusual logical certainty of mathematics by regarding its subject-matter to be nothing more than an entertaining convention.

III

Peirce was justly proud of his having been brought up in the laboratory and of so having acquired the experimental frame of mind when still young. And indeed his best developed writings are the contributions to the theory of deduction and to the analysis of probable reasoning.

The substance of his discussions of scientific method centers around his perception that science is surer of the correctness of the general procedures it employs than it is of any specific result achieved by them. Those procedures involve the specific application of a self-corrective hypothetic-deductive method, and Peirce was convinced of the universal applicability of that method. He was eager to defend it against all corners, like a knight his fair lady whom he has chosen from the entire world. He could, therefore, consistently attack the positivists for their doctrine that all hypotheses must be capable of direct verification (2.511n), and also declare that the full meaning of a proposition is to be found in what it prescribes us to do to gain perceptual experience (2.330). Even without waiting for his complete writings on pragmatism, which will appear in later volumes, it is possible to form a fair estimate of the studies on scientific method contained in these volumes.

Peirce made much of the distinction between explicative and ampliative reasoning. Explicative reasoning is either *necessary* or *probable*, ampliative reasoning either *inductive* or *presumptive*. We have already considered the main features of the first, and shall return below to a more careful analysis of probable inferences. What is ampliative reasoning? In general, says Peirce, it is such that "the facts summed up in the conclusion are not among those stated in the premises. They are different facts, as when one sees that the tide rises *m* times and concludes that it will rise the next time. These are the only inferences which increase our real knowledge, however useful the others may be" (2.680). But let us see what its species are.

Induction consists in inferring the constitution of a class from the constitution of samples drawn from it. We determine by induction the nature of a cargo of wheat through judicious sampling; this process determines for us, by

empirical means, the ratio with which certain characters occur. *Presumptive reasoning*, on the other hand (also called abduction, retroduction, hypothesis), consists in inferring an explanation, cause, or hypothesis from some fact which can be taken as a consequence of the hypothesis. Presumptive reasoning is therefore the provisional adoption of a hypothesis, because every possible consequence of it is capable of verification, so that by pursuing this method its disagreements with facts will be revealed (1.68). The difference between induction and presumption is that the former infers the existence of phenomena homogeneous to those already observed, while in the latter something heterogeneous to that already observed is concluded, even something impossible for us to observe directly (2.640).

Now Peirce believes that these forms of inference are different from explicative probable reasoning, which he also calls statistical deduction. For the latter is probable, as we shall see more fully below, in the sense that though in a particular case its conclusion is false, yet in the long run and with a definite ratio, *similar* conclusions would be approximately true. But induction, for example, is probable only in the sense that though it may give a false conclusion, yet in the long run where the same process is used, a *different* but approximately true conclusion would be drawn (2.703). Thus, in probable reasoning the predicted conclusion is *verified* in the long run in a definite ratio of all the cases; in ampliative reasoning, the predicted conclusion will be *changed* in a good proportion of the cases, but will become approximately correct in the long run (2.709).

But it can be shown that the distinction between statistical deduction and the species of ampliative reasoning is only a *psychological* one, and refers simply to the various degrees of completeness our knowledge may possess. The distinction does not touch the *logical* question as to the *validity* of these forms of inference. For consider: If we reason at all, we must reason from premisses, and if we reason validly we do so because the conclusion is obtained in accordance with the leading principle or canon of the argument. When Peirce asks how it is possible that a man can observe one fact and then pronounce judgment concerning another fact not involved in the first, and when he then adds that such reasoning has no definite probability (2.690), he is surely inconsistent with his own analysis. If the inference is made in virtue of some leading principle, it *does* have some degree of probability, namely, the relative truth-frequency associated with that principle. If the "inference" does not involve a leading principle, *no reasoning* takes place in any usual sense of the word. Thus, I sample a bag of beans and find half the sample is white. If I *know* nothing concerning the representative nature of the sample, I can *conclude* nothing about the color of the beans in the bag, although I may make a guess, consider my guess a hypothesis, and then proceed to test the hypothesis in the usual way. But if I *do* know that samples drawn in the way I drew this one *are* representative of the beans in the bag, I can conclude

something about the constitution of the bag by statistical deduction; and the argument is probable in the sense to be defined presently. Ampliative inference is thus the experimental process by which we determine approximately the numerical values of the relative truth-frequencies involved. But as Peirce himself admits, its species are inverse forms of deductive probable inference, and their *validity* (the only relevant question in logic) is the validity of statistical deductions (2.511, 2.718).

We need discuss therefore only the theory of deductive probability, which Peirce adopted from Venn and developed in an original way.[6] The following are its essential features: (1) Probable inference, like all inference, depends for its validity upon determinate relations between *propositions*. (2) No proposition is probable intrinsically, but only with respect to other propositions which are evidence for it. Probability is thus a *relation* between propositions. (3) Whether a proposition has or has not a degree of probability on definite evidence does not depend on the state of mind of the person entertaining the proposition. Psychology is as little (or as much) relevant in probable inference as it is in necessary inference. (4) An inference is probable in so far as it belongs to a *class* of inferences in which the frequency of the conclusions being true is a determinate ratio of the frequency of the premises being true. Probability is the *limiting value* of the fraction whose numerator is the number of times both antecedent and consequent are true and whose denominator is the number of times the antecedent is true, as the number increases *without limit*. Hence probability is not, as on Keynes' view, an unanalyzable concept. (5) The same proposition may have different degrees of probability in accordance with the sort of evidence which is marshaled in its support. But the relevance of the evidence can not be determined on formal grounds alone.

It is clear that since probability is the limit of an endless series, we can never assert categorically the value of a probability. Hence the assertion that such and such is the probability of a proposition is always a *hypothesis*, always subject to correction. And hence, also, the sole business of the experimental sciences, since we can not exhaustively study all of nature, is to carry on *sampling operations* which will indicate approximately the values of different probabilities.

The question remains, therefore, under what conditions the process of sampling will lead us to an approximately true knowledge of the constitution of a field. Peirce prepares his reader by first rejecting *in toto* all theories of probability which are based upon the principle of equal distribution of ignorance; second (this is a corollary from the first) rejecting the use of

[6] A rigorously systematic discussion of the theory was never given by Peirce. It has been left for German students (Von Mises, Reichenbach, Tornier) to discover independently the fundamental principles of the truth-frequency theory.

inverse probabilities; and third, denying that the validity of sampling depends on any material assumptions such as the uniformity of nature (2.102, 2.749). According to him, sampling is a valid process whatever be the constitution of the universe, since its validity follows from the *manner in which the sampling is conducted*. And the following are the conditions under which sampling is a reliable process: first, the subject-matter must have a determinate nature; second, the sampling should be carried out without bias, the samples must be "fair"; and third, the characters whose distribution is investigated must be pre-designated or predicted prior to drawing a sample, if that sample is to serve as evidence for any hypothesis concerning the constitution of the field. And Peirce concludes that while in any given case the process may lead to false results, it will, if pursued far enough, approximate more and more closely to the truth.

Now it is true that the method of sampling Peirce discusses is, in general outlines, the one pursued in the sciences. But isn't Peirce claiming more for the method than is warranted? Thus, the assertion that if samples are drawn "fairly," i.e., without bias, they will ultimately yield a "fair," i.e., representative, sample of the constitution of a field, is either a bald tautology, or is a *material* assumption to the effect that the specific mode of sampling is carried on in such a way that every variation in the field will turn up in our samples at some time or other. But if the amount of independent variety in the field should be indefinitely large (or even too large to handle with the methods at our disposal) we may never obtain representative samples no matter how, or how far, we carry on the process. *Some material* assumption, e.g., the existence of a limit in a rapidly converging series of variations, or the existence of a finite number of types or classes in nature, seems to be required if the process of "fair" sampling should yield representative ones. It is true that such a material assumption is itself a hypothesis, and must be evaluated in accordance with the usual canons. But this only goes to show that we can get *no absolute guarantee* in advance that any given method will work, no matter how trustworthy it may have shown itself to be.

I also can not escape the impression that in spite of Peirce's vehement denial of the principle of antecedent equiprobabilities, it returns to plague him. The process of sampling depends on the fact that more samples of a certain kind appear than others. But why do they? Because, the answer is, more samples of that kind occur in the field studied. But since samples not yet drawn exist only *potentially* in the field, it is legitimate to ask why there should be potentially more of one kind than of another. And the answer seems to be that if all the relevant characters in the field were combined in every permissible way, *and if all these permissible combinations were antecedently equally probable*, then there would be more of one kind than of another.

Because of the sharp distinction Peirce makes between induction and presumption, he tends to obscure the identity of the processes employed, say,

in evaluating the constitution of a cargo of wheat and in determining the correctness of the theory of gravitation.[7] This has as a consequence an unnecessary restriction of the frequency theory of probability, a restriction which is being removed by modern students. But already Royce showed that in evaluating a theory we are taking samples from all its logical consequences. There is therefore no good reason to doubt the universal applicability of the frequency theory of probability and the essential identity of scientific method in all departments of science.

IV

The editors of this edition deserve the congratulations of all students for their self-effacing and intelligent labor in bringing a semblance of order into a wilderness of manuscript. They have almost achieved what Peirce thought impossible for mortal man to do. Each volume has been supplied with very full indices, and in several cases with helpful explanatory notes. In the light of the enormity of the task and the excellence of the achievement, it may seem ungracious to find fault. But I think it is unfortunate that Peirce's larger manuscripts have been broken up and distributed throughout the volumes; this is especially true for the completed *Grand Logic*, the several chapters of the *Minute Logic*, and the *Lowell Lectures*. One may also question the judgment of the editors in neglecting to include in these early volumes certain outstanding papers to illustrate Peirce's doctrines: e.g., his review of Frazer's *Berkeley* for his views on nominalism, or his essay on the "Fixation of Belief" for his doctrine of fallibilism. Because of the topical arrangement of the papers, the historically interested reader will be able to estimate the extent to which Peirce's ideas underwent change only by a painful leafing of each volume. It is hoped the editors will manage to include a table in the final volume indicating where the component parts of the larger manuscripts are to be found, and possibly also the chronological sequence of the papers.

Collected Papers of Charles Sanders Peirce. Edited by Charles Hartshorne and Paul Weiss. Cambridge: Harvard University Press. 1933. Vol. III, Exact Logic. Pp. xiv + 433. Vol. IV, The Simplest Mathematics. Pp. x + 601.

The original speculative power and acuteness of Peirce's mind appear at their very best in the present two installments of the *Collected Papers*. But space prohibits anything other than a brief indication of some of their striking contents.

[7] He declares he had committed a fundamental error in his Johns Hopkins essay on "Probable Inference," but he does not state explicitly what the error is (2.102).

Volume III consists entirely of previously published papers on what goes by the ill-fitting name of mathematical logic, and includes his great series of papers on the logic of relatives. Reading them consecutively one is impressed how steeped Peirce was in the mathematical researches of his day, and how the inquiries into the nature of generalized algebras by men like his father and Sylvester molded the course of his own thinking. There can be little question that Whitehead's *Universal Algebra* represents the culmination of some of Peirce's attempts in that direction. Many of the papers are now primarily of historical interest; and looking back upon them from the vantage ground of the elegant discussions in the *Principia*, they seem needlessly difficult simply because of the clumsy symbolism Peirce employed. And yet, in spite of the frequent incoherence of his statements, it is an inspiring experience to see him grappling heroically with novel ideas, conquering one only to attack another. These papers reveal that while Peirce strove mightily to achieve a philosophic system, he was essentially a man of great visions, but incapable temperamentally of organizing his ideas into unity and coherence. It goes without saying that he anticipated much that was independently discovered by others subsequently, e.g., the logistic thesis concerning the nature of mathematics, or the essential features of Poincaré's theory of applied geometry as a "convention." In addition, material more or less adequately treated in the preceding volumes of this edition, is restated and often amplified in both of the present volumes, so that a somewhat clearer light is thrown on such things as "fallibilism" in mathematics and the theory of signs. His comments on a variety of logical atomism are eminently worth reading, especially to-day. His defense of "infinitesimals" is provoking to say the least, even if not clear or convincing, and even if it seems to miss the point as to why the idea has been abandoned.

Volume IV consists chiefly of hitherto unpublished material on the foundation of logic and mathematics. Peirce anticipated the ideas expressed in Sheffer's stoke function, and the ideas as well as the use of the currently prominent matrix method. He made very full studies of the cardinality of classes, of the well-known contradiction, of orders of infinity, of linear algebras as instances of the general theory of relations; and his demonstrations have interesting, though sometimes uncritical, variations on the classic proofs. His judgment on the metaphysical importance of some of these studies seem now curiously unbalanced, e.g., the significance of the projective theory of distance; although anyone who has been exalted by that subject will surely forgive even an extended period of intellectual insobriety. His discussion of the logical priority of ordinal to cardinal number is particularly good and valuable, and ties up directly with the current *Grundlagenstreit* in mathematics. Also, little sermons on the value of logic, on how to read most profitably, on free will, on the issues of nominalism, and on the historical parallels between styles in architecture and types of logical theory, are to be found hidden away amidst technical discussions.

Peirce paid much attention to logical diagrams as instruments for the analysis of logical form, rather than as engines for calculation. And he regarded his Existential Graphs, a systematic scheme for representing geometrically any proposition however complex, as his *chef d'oeuvre*. A full account of it is included in Volume IV. But while the method is ingenious, and in many respects an improvement on the Euler and Venn diagrams, it is very clumsy; and it is difficult to attach to it the great importance which Peirce did. But perhaps the bearing of Existential Graphs upon Peirce's pragmaticism will become evident in later volumes.

All in all, Peirce's technical mastery of detail and his grasp of metaphysical issues as revealed in specific subject-matter are most impressively exhibited in this latest volume of the edition. It does not offer solutions to many pressing questions; it does not even ask some that one would like to ask. But it is a mine of suggestions to him who has the wit and patience to ferret them out.

The editors have worked *con amore* in preparing the text for the press, and the high standards they set themselves in the previous volumes have been continued in this. Reservations must be made concerning their judgment and good taste in some matters. Thus, as one instance, it is doubtful wisdom to place the contents of Book II, Chapter 4, of Volume IV after the contents of Chapters 1, 2, and 3. It is also a pity that all the Lowell Lectures are not to be published. I have noticed a few misprints. In Volume III, the third footnote on page 220 contains two misplaced vinculi; the equation on line 11 of page 326 is missing a variable x; "uncovered" in the footnote on page 359 should be "recovered." In Volume IV, Figure 17 on page 306 is incorrectly drawn; and the words in Figure 105 on page 367 should be inverted.

Collected Papers of Charles Sanders Peirce. Edited by Charles Hartshorne and Paul Weiss. Volume V, Pragmatism and Pragmaticism. Cambridge: Harvard University Press. 1934. Pp. xii + 455.

Of the volumes of the *Collected Papers* which have appeared thus far, the present one is undoubtedly the richest in historical importance, in diversity of material, and in veins of thought which still remain to be mined. It contains the long awaited Pragmatism Lectures, and presents in available form Peirce's weightiest papers on general philosophy – those published in the *Journal of Speculative Philosophy*. I know of no better way to reach the heart of Peirce's doctrines than to read the important essays published in Book II of the present volume. The papers in Book III discuss Peirce's relations to the philosophy of common sense, and contain many of his own views under the label of critical common-sensism.

The Pragmatism Lectures repeat with simplifications and some elaborations doctrines already familiar from the first two volumes of the present edition: the phenomenology of the universal categories, the theory of signs, and the analysis of reasoning into its three main types. Peirce's strong idealistic leanings become very apparent here as elsewhere; and his views on reflective thought as an instrument for establishing general modes of behavior (thus subordinating logic to ethics), are brought out clearly. But on the whole the Lectures are disappointing: they are repetitious, they lack integration, and they contain many irrelevant though often interesting by-paths.

With the possible exception of the technical papers on strict logic, Peirce's writings on the theory of meaning seem to me to contain his most substantial contribution to philosophy. According to him, pragmatism maintains that nothing is in the understanding unless it is first in the senses, that nevertheless perceptual judgments always contain an element of generality or hypothesis, and that therefore such judgments are simply limiting cases of abductive reasoning and so always subject to correction. Ideas are to be clarified in terms of overt, public behavior of things, not in terms of private data of sense or self-luminous abstracta. In this insistence upon the intimate connection between sense and reason as well as upon the denotative reference of all intellectual conceptions, lie the strength and the difficulty of the pragmatic account of meaning. It eschews claims to infallible cognitive powers and yet avoids a stultifying skepticism. It must be admitted that the ambiguities which appear in Peirce's hitherto published writings on the theory of meaning are not ironed out in the papers now published for the first time. And yet if Peirce had been taken as the standard expositor of pragmatism, the often dreary and fruitless polemics on the nature of truth during the first two decades of the present century would have been avoided, with undoubted profit to the clarification of ideas in various departments of thought. For by pragmatism Peirce understood a method of making ideas clear, a branch of logic and scientific method, not a cosmology or a metaphysic. That is why, in spite of his penchant for a form of speculative idealism, he will remain a stimulus and a guide to all students of philosophy whose passion is to understand rather than to legislate.

Kant's influence upon contemporary positivism is a byword. It is interesting nevertheless to read Peirce 's account of the indebtedness of his "proto-positivism" to the eighteenth-century thinker, and students of the history of ideas will find much in the present volume to repay their reading of it.

Collected Papers of Charles Sanders Peirce. Edited by Charles Hartshorne and Paul Weiss. Vol. VI, Scientific Metaphysics. Cambridge: Harvard University Press. 1935. Pp. x + 462.

Students of Peirce's writings who hope to find in the present volume a carefully worked out metaphysics will be disappointed by its contents. Most of the papers included in it appeared in Peirce's life-time, and while some of the hitherto unpublished material helps fill out lacunae, on the whole there is little in the volume which was not known before. Like the preceding volumes in this edition the present one is a curious mixture of grandiose cosmological speculation and penetrating analyses upon a variety of topics.

The volume begins bravely enough with a program for metaphysics of studying the most general features of reality. Peirce claims that the objects of metaphysical inquiry are open to observation in the same sense that the objects of science are, and he attributes the backward condition of metaphysics to the fact that it's leading professors have been theologians. It is perhaps this program and this claim that led the editors to choose the title of "Scientific Metaphysics" for the volume. However, while Peirce has many important things to say about the generic features of reality in his discussion of the categories, it is a Schellingian outlook which characterizes most of the volume. Peirce declares that "metaphysics has to account for the whole universe of being. It has, therefore, to do something like supposing a state of things in which that universe did not exist, and consider how it could have arisen." There follows the familiar tychistic-agapastic-synechism. Since Peirce believes that it is regularity which requires explanation, he tries to exhibit it as the product of evolution from the chance elements in the universe. His conclusion is that the only intelligible theory of nature is a form of objective idealism, according to which matter is effete mind, the habits of the latter becoming physical laws. An interesting feature in this cosmogony is that not only the actual universe but also the Platonic realm of forms is evolutionary in origin.

The best things in the volume, to my mind, are the specific analyses Peirce makes of such ideas as necessity, chance, space, time, infinity, and continuity, and the additional light that is thrown on his views on probability and the nature of science. In his discussion of continuity, Peirce occasionally approaches the standpoint of contemporary intuitionism, although he does not work out the implications of his views. However, even in his analyses Peirce is dominated by his evolutionary cosmology, not always in the interest of clarity or cogency. Thus, while Peirce did yeoman service in pointing out the contingent factors in the laws of science, he seems to me to obscure the issues when he transforms "chance" into a substantial *agent*. And while his attack on necessitarianism is impressive, I do not find that he offers any respectable evidence for his view that the "order of nature" is changing, or that these changes are brought about through the operation of a primordial "mind." Again, his ideas on space and time, when I can understand them, seem to me very naïve; and his conclusion that legal corporations have a "real" personality illustrates the tricks that words will play upon minds that should know better.

It is to be hoped that the remaining volumes of the *Collected Papers* will be published in short order. But enough of Peirce's work has now appeared to suggest the conclusion that a consistent system of ideas can not be forced upon him. He said different and incompatible things at different times, and there seems no way of reconciling his periods of forthright naturalism with the anthropomorphic idealism of other portions of his writings. Peirce characterized himself justly when he declared that he was "a mere table of contents, so abstract, a very snarl of twine."

PEIRCE'S THEORY OF QUALITY

John Dewey, "Peirce's Theory of Quality." *Journal of Philosophy* 32.26 (19 December 1935): 701–708.

The questions raised in Mr. Goudge's criticism of Peirce[1] on the nature of the "given," are of high importance in the contemporary state of philosophy in which the problems of the given, on one hand, and of universals and essences, on the other, bulk so large. The problems themselves far transcend, of course, the question of the internal consistency of Peirce's own views on the subject. But their importance also renders it highly important that Peirce's own contribution be correctly apprehended. Hence I propose to point out some fundamental misconceptions in Mr. Goudge's rendering of Peirce's ideas.

Peirce is considering, in the passages of which Mr. Goudge treats, phenomenology, or the matter of experience as experienced. While he introduces at times (and rather unfortunately in my opinion) his predilection for panpsychic metaphysics, he is not writing on a metaphysical or cosmological basis, but is giving a logical analysis of experience; an analysis based on what he calls Firstness, or sheer totality and pervading unity of quality in *every*thing experienced, whether it be odor, the drama of *King Lear*, or philosophic or scientific systems; Secondness, existentiality, or singular occurrence; and Thirdness, mediation, or continuity.

Now Mr. Goudge finds an inconsistency in Peirce's treatment of Firstness on the ground that the latter holds both that it is brutely given as qualities of feeling and that it consists of "logical possibilities or universals" (p. 538). Now I submit that a careful reading of Peirce shows (i) that when he uses the word "possibility" he means by it material potentiality or power, not logical possibility, and (ii) that he does *not* hold that Firstness as such, that is, as the given permeating total quality of anything experienced is, strictly speaking, even potentiality. I begin with the latter point. Mr. Goudge quotes the following: "Firstness...is perfectly simple and without parts.... The word *possibility* fits it."[2] Very unfortunately, Mr. Goudge terminates his quotation in the middle of the sentence quoted, and thereby omits a point that is necessary to the correct understanding of Peirce's point. Here is the passage as it stands in the

[1] *Journal of Philosophy*, Vol. XXXII (1935), pp. 533-544.

[2] Page 537 of Mr. Goudge's article; *Collected Papers of Peirce*, I, 531.

original text: "The word possibility fits it, *except* that possibility implies a relation to what exists, while universal Firstness is the mode of being of itself. *That* is why a new word was required for it. *Otherwise*, possibility would have answered the purpose."[3]

I am not suggesting that Mr. Goudge omitted the qualifying clause and the additional sentences in order to make out his point. Doubtless he thought them irrelevant. But they are not; they are the meat of the matter as far as quality as possibility is concerned. In his analysis, which is logical not psychological, of a phenomenon, of anything as experienced, he finds it necessary to consider Firstness, or the quality of an experience, both as it is in itself and as it is in relation to the other aspects of a phenomenon. What he is saying in the passage quoted is that while quality is possibility in relation to Secondness, or existence, it is *not* possibility in and of itself. Secondness, or existence, he defines elsewhere in terms of reaction and interaction, of resistance or brute self-assertion. It is actuality in the literal sense. It is also strictly individual. In reference to existence so defined, quality is both possibility and generality. A pervasive unity of quality is a condition to be satisfied in connection with the existential aspect of any phenomenon. Existence, he says, is "just when and where it takes place...and, therefore, different Secondnesses, strictly speaking, have no common quality."[4] But experiences do have common qualities; therefore Secondness is *logically* conditioned by quality. Generality does not belong to any phenomenon *in its occurrence*, but the *matter* of the experience gets generality because of co-presence of Firstness or total undivided quality. Quality or Firstness *per se* is neither individual nor general. But *as* the Firstness *of* Secondness it provides generality to the latter. Unless the fact is clearly recognized that Peirce deals with Firstness both by itself – indicating its denotation – and as the Firstness *of* Secondness (as well as of Thirdness) what he says is more than inconsistent. It has no point.

I come now to the other point. "Possibility" in isolation from a context is an ambiguous word. It means both logical possibility and material potentiality. While Peirce is concerned to indicate that quality is Firstness because it is a logical condition of what he terms existence (and of Thirdness, continuity or rationality), yet when he says "the word *possibility* fits it," he is speaking of power, of material potentiality, not of quality as logical possibility. This fact had been made clear by the time Peirce arrived at the passage quoted. As early as 422-425 (where he is expressly discussing quality) he makes this point evident in a fairly extended discussion from which I quote some typical passages. Quality

[3] Italics not in original text.

[4] *Collected Papers*, I, 532.

> is not anything dependent upon the *mind*. It is not anything which is dependent, in its *being*, upon mind, whether in the form of sense or thought. Nor is it dependent, in its being, upon the fact that some material things possess it. That quality is dependent upon sense is the great error of the conceptualists. A quality is a mere abstract *potentiality*, and the error of these schools lies in holding that the potential, or possible, is nothing but what the actual makes it to be.[5]

The concrete illustrations that Peirce goes on to use prove incontestably that his use of the word "potentiality" is not accidental. He criticizes those who claim that a thing does not have the *quality* of red in the dark, or that iron does not have the quality of resistance when not actually exerting pressure. "Do you mean to say that a piece of iron not actually under pressure has lost its *power* of resisting pressure?" (I, 422). This power is actualized only under conditions of interaction with something, but it is there as a power nevertheless. Quality *per se*, in itself, is precisely and exclusively, according to Peirce, this potentiality; it is like potential energy in relation to kinetic, the latter involving resistance and hence actuality or existence. "It is impossible to hold consistently that a quality only exists when it actually inheres in a body." A quality is what "*might* happen," and since every law, indeed every description of an event, involves something that *may* happen, but is not now happening, it involves quality as potentiality. The same analysis applies to generality. Capacity or power to resist pressure is actualized on particular or individual occasions. But *qua* power it is general, for it is a *way of* behaving. So he criticizes the nominalists for denying, by implication if not explicitly, that things have ways of being. In Peirce's scheme, the potentiality and generality he is talking about are so far from being "*logical* possibilities or universals" that they provide the cosmological or physical basis for logical possibilities and universals. Peirce's theory of "leading principles" as universals has no meaning except as a carrying over into the field of inquiry ways of behaving that are characteristic of things. What in my opinion is Peirce's most characteristic philosophical contribution, namely, his original theory of the relation between the existential and the logical, is wholly meaningless if it is not seen that he is speaking of possibility and generality as ways or modes that with respect to actualization are potential and general, being actualized only under individualized conditions of interaction with other things.

Peirce even goes so far as to question the generally accepted theory that such actualized qualities as those of different colors are connected simply with

[5] Italics mine. Compare with this passage a prior statement, 419, "The qualities, in so far as they are general, are somewhat vague and potential. But an occurrence is perfectly individual. It occurs here and now… . Qualities are concerned in facts but they do not make up facts."

quantitative differences of vibrations. They "will not make such a difference as that between deep vermillion and violet blue… . It is doubtless our imperfect knowledge of these vibrations that has led us to represent them abstractly as differing only in quantity," so that increased knowledge of electrons will enable us to find in them different ways of behaving, or potentialities, that correspond to different qualities of sense.[6]

It should now be evident that what Mr. Goudge thinks is an inconsistency consists simply of the fact that in his analysis Peirce takes Firstness, or quality, in two aspects; once as it is in itself and once as it is in relation to Secondness or existence, and that potentiality and generality attach to it exclusively and necessarily in the latter connection. Moreover, he gives the reader explicit notice that this is just what he is doing. He does it in the clause and sentences Mr. Goudge omitted, and he has done it earlier in the following passage:

> We see that the idea of a quality is the idea of a phenomenon or partial phenomenon considered as a monad, without reference to its parts or components and *without reference to anything else*. We must not consider whether it exists or is only imaginary, because *existence* depends upon its subject having a place in the general scheme of the universe. An element separated from everything else and in no world but itself, may be said, *when we come to reflect upon it*, to be merely potential. But we must not even attend to any determinate absence of other things; we are to consider the total as a unit.

And almost as if to guard against such a misconception as that of Mr. Goudge, he says:

> When we say that qualities are general, are partial determinations, etc., all that is true of qualities *reflected upon*; but these things do *not belong* to the quality-element of experience.[7]

Considered in itself, quality is that which totally and intimately pervades a phenomenon or experience, rendering it just the one experience which it is. Of course, then it is "ineffable." Mr. Peirce or any one can only call attention to it and invite others to note its presence in any and every experience they have a mind to take. When it is described, even when it is denotatively mentioned, there is another and new experience having its own, so to say,

[6] At this point Peirce brings in his panpsychic metaphysics. But he expressly calls his reference a *guess*, and in any case his logical analysis is independent of this particular metaphysical interpretation.

[7] I, 424, 425; italics mine.

totalizing unifying quality – and so on *ad infinitum*. When such quality is reflected upon in relation to existence, it is seen to be a potentiality and to be general. As Peirce points out, a quality does not *resist* while existence involves reaction and resistance. Hence the experience of anything purely imaginary, say, centaurs, has its own pervading and unifying quality, just as much as does that of horses in the barn. But this quality, while having no evidential value with respect to existence, is a condition of there being *any* experience and hence of an experience or phenomenon ("phaneron").

The distinction involved in the clause "or *partial* phenomenon" is also important. What is true of the experience of the drama of *King Lear* as a whole is true of every act, scene, and line in it so far as that experience has its own unity. It would be a complete mistake to confine the application of quality as Firstness to such things as red and hard and sweet, although it applies to them as partial phenomena. It is something which characterizes any and every experience subject-matter, as far as that experience has unity and totality, wholly independent of the complexity of its "components" and of the place of these components in the existential world. Hence where we recall a prior experience, the experience of recall is a new experience having its own pervasive unifying quality.

Up to a point, therefore, Peirce in what he says about ineffability and undescribability is simply generalizing the commonplace that in order to *have* red as a quality you have to have direct experience of it; that while a blind man can understand the theory of color and the place of what is designated red in the theory, red as an immediate quality can not be present in his experience. This is not a matter of dialectic or argument, but is something which is either so or not so, and the only way of finding out whether or no it is so, is denotative, not dialectical. In addition to generalization of the commonplace in question, he is saying that no matter how complex the constituents of any unitary experience and whether the constituents are existential or imaginary, the unity and totality of the experience is that of quality, and conversely.

When Mr. Goudge, then, says that quality or Firstness in Peirce is the *given* in the sense of being "broadly synonymous with the 'ideas' of Locke and Berkeley, the 'impressions' of Hume, the *Vorstellungen* of Kant, and the 'sensa' and 'presentations' of contemporary philosophy" he is far off the track.[8] It would be nearer the fact to say that he is engaging in deliberate, even if implicit, criticism of the basis and implications of all such theories. For he is pointing out that any *experience* of "ideas, impressions, sensa, presentations," etc., has its own unity, its own unique and unreduplicable quality. This statement holds, for example, of Locke's experiences when thinking and

[8] P. 534 of his article.

writing about *ideas* and of the experiences of any one reading Locke's *Essay* or reflecting upon it. Moreover, what are called ideas by Locke are taken by him to have *existence* (at least in or before the mind), and the whole point about *Vorstellungen* and *sensa* is that some kind of existence is attributed to them, whether psychical or otherwise. But, as the foregoing should have made evident, Firstness or quality is something in itself wholly independent of existence, the latter being a matter of "struggle," of action-reaction. Any problems that arise about ideas, impressions, etc., are in Peirce's theory affairs of *components*, of their place in the scheme of existence as determined by actual reaction and resistance. If what Peirce means by Firstness resembled in any way, to say nothing of being "broadly synonymous with," the givens of various modern philosophers, it would have been sheer nonsense to call them ineffable, or to apply to them any of the characterizations Peirce employs. But it is not nonsense to say that every experience which has Lockeian ideas or Humeian impressions for its subject-matter or components has its own quality, and that any description of this quality that may occur takes place in another and new experience having its own unity and totality of quality.

When Mr. Goudge suggests some rough similarity between Peirce's qualities and Santayana's sense-data as essences, he is following the same wrong road still further.[9] Anything that can be termed essence, meaning, subsistence, belongs in the domain which Peirce calls Thirdness. Similarly, when he discusses Peirce's view that quality as such is indescribable, he says: "Peirce's view that the act of describing must alter the *nature* of the given would entail a denial of the possibility of real knowledge, and is therefore self-contradictory," and uses the multiplication-table as an instance of the givenness in question.[10] It is completely overlooked that this conception of nature is a conception belonging to the domain of Thirdness, not of Firstness. It belongs, by description, to the domain of knowledge, while quality belongs to the domain of the occurrences of any single and total experience wholly irrespective of any cognitive or reflective reference. Peirce does not hold that the act of describing alters the quality of what is described, but that the experience occurring in an act of describing the quality of another experience, of the multiplication-table, or anything else, itself has another quality. The quality of the original experience has become a component of this further experience, which has its own quality. Quality, as Peirce says, is "first, present, new, initiative, original, spontaneous, free, vivid, conscious, and evanescent." But it is such just because it is of a different dimension from any content or component of either existent or rational objects.

[9] P. 543 of his article.

[10] P. 539 of his article.

I wish to add a few words about Peirce's *psychological* identifications and descriptions of Firstness, Secondness, and Thirdness, respectively. In this psychological universe of discourse, Quality (including sensations as barely *had* and not referred) represents feeling; Secondness represents existence as conative (since involving effort-resistance); and Thirdness, as cognitive thought, represents rationality. Now these psychological descriptions can be interpreted in two ways. As far as Peirce's panpsychic predilections are concerned, they are doubtless to be taken rather literally. That is, in his metaphysical cosmology Peirce was inclined to believe that *apart* from experience and phenomenology, the universe is constituted out of relations between something very like feelings and acts of effort-resistance, while natural continuity is inherently assimilable to what presents itself in experience as reflective thought. But, as I have already pointed out, his logical analysis of a phenomenon, or any experience, is logically independent of this cosmological interpretation, and stands or falls on its own merits.

Moreover, the matter in question is incapable of another interpretation. Whether "feelings," for example, are or are not constituents of the natural world, it can be affirmed that, *psychologically*, it is through feeling (including sensation as such) that qualities present themselves in *experience*; that it is through volitional experiences that existence, as a matter of action-reaction, is actualized in experience, and it is through thought that continuities are experienced. All that is required on the ontological side is that existence itself is qualitative, not merely quantitative, is marked by stress and strain, and by continuities. That much, but only that much, of ontological interpretation is postulated in Peirce's logical analysis of experience.

Mr. Goudge quotes a passage from Peirce which is highly significant in this connection: "Feeling is the true *psychical representative* of the immediate as it is in its immediacy, of the present in its direct, positive presentness."[11] This idea that feeling is the psychical representative of that immediacy of being which characterizes, according to Peirce, everything in the natural world, is all that is essential to his theory. The rest is supernumerary; as he repeatedly says, with unusual frankness for a philosopher, it is a *guess*. If what is suggested in such a passage is followed out, we do not define or identify quality in terms of feeling. The reverse is the case. Anything that can be called feeling is objectively defined by reference to immediate quality: anything that is a feeling, whether of red or of a noble character, or of *King Lear*, is of some immediate quality when that is present as *experience*. Personally, I

[11] *Collected Papers*, V, 44; italics mine. The passage as printed in Peirce makes even a closer connection with the Firstness of the passages taken from Vol. I. It actually reads as follows: "The quality of feeling is the true psychical representative of the first category of the immediate as it is, etc."

believe this to be sound doctrine. But whether it is or is not, it is all that is implied in Peirce's logical analysis. I do not wish to minimize Peirce's own inclination toward a pan-psychic interpretation which makes the immediate quality of *things* to be of the nature of feelings. But I do emphasize the fact, which he himself repeatedly emphasizes, that this interpretation is optional so far as the analysis of experience is concerned.

I do not profess, to end with a personal word, to agree completely with Peirce's analysis, for I do not think that I have fully mastered it. But I am quite sure that he, above all modern philosophers, has opened the road which permits a truly experiential philosophy to be developed which does not, like traditional empirical philosophies, cut experience off from nature, a road which if followed leads out of the impasse into which Locke's "ideas" and the contemporary theory of sensa and of essences alike conduct philosophy. For this reason, it is important that Peirce's theory should be understood for what it is.

THE PRAGMATISM OF C. S. PEIRCE

Justus Buchler. "The Pragmatism of Charles Sanders Peirce." *Psyche* 17 (1937): 92–131.

Peirce speaks on one occasion of critical common-sensism as a "consequence" of pragmatism (5.439), and says, on another, that "a pragmaticist, to be consistent, is obliged to embrace" critical common-sensism (5.499); he says also, on the other hand, "I have myself called pragmatism 'critical common-sensism'; but, of course, I do not mean this for a strict definition" (5.494). If we remember that "critical common-sensism" in Peirce maybe understood in a broad and a narrow sense, we should interpret these statements loosely, bearing in mind only that between critical common-sensism as understood in Part I and pragmatism as it emerges from the considerations to follow there is an intimate connection.[1] One might say that to accept common sense as the fundamental basis of knowledge is to accept a pragmatic analysis of meaning, but one might with equal justification say that to accept such an analysis is to accept common sense. We could say that the argument against purely demonstrative names, which underlies the argument against intuitive knowledge, depends to a certain extent on the pragmatic criterion of the meaning of these names; but from another point of view it might be sounder to say that the formulation of the pragmatic criterion is based on the nature of knowledge in general, and its communication in signs, and that an examination of the nature of knowledge refutes by itself the notion of purely demonstrative names.

Origin of Pragmatism. The word 'pragmatism' seems to have been first publicly used by James in the lecture "Philosophical Conceptions and Practical Results" of 1898. He there speaks of "Peirce's principle," "the principle of practicalism – or pragmatism as he called it, when I first heard him enunciate it at Cambridge in the early 70's."[2] The occasion to which James refers was probably one of the meetings of the "half-ironically, half-defiantly" named

[1] "Pragmaticism ... implies faith in common sense and in instinct, though only as they issue from the cupel-furnace of measured criticism" (6.480).

[2] *Collected Essays and Reviews*, p. 410.

"Metaphysical Club," formed by Peirce.[3] These meetings were attended by James, Chauncey Wright, Nicholas St. John Green, O. W. Holmes Jr., F. E. Abbot and John Fiske. It was at this Club that "I drew up," says Peirce, a little paper expressing some of the opinions that I had been urging all along under the name of pragmatism" (5.13). The paper expanded, five or six years later, into the two papers "The Fixation of Belief" and" How to Make Our Ideas Clear," appearing in the November 1877 and January 1878 issues, respectively, of the *Popular Science Monthly*. Although what later became known as the 'maxim'[4] of pragmatism was stated in the second of these papers, the word 'pragmatism' was not used by Peirce himself in print until 1902, when he contributed an article on the subject to Baldwin's Dictionary. He says that as late as 1893 he could have inserted the word in the Century Dictionary (for which he wrote many definitions) but refrained out of uncertainty that the extent of the word's usage justified it, as well as out of over-modesty (5.13, 13n.). James continued to ascribe the origin both of the conception and the word to Peirce notably in 1902,[5] 1904[6] and 1907[7]; and he quoted or referred to Peirce in various writings. Professor Perry holds it to be "clear that the idea that pragmatism originated with Peirce was originated by James." For "Peirce states explicitly, in his contribution to the Dictionary of Philos. and Psychol., 1902, that he derived his view from Kant."[8] Peirce does not, in fact, say that he "derived his view from Kant" but that he "was led to the maxim by reflection upon Kant's *Critique of the Pure Reason*" (5.3 or Baldwin's Dict., "Pragmatic and Pragmatism"), which is some what different. He repeatedly writes that of all philosophical classics he was virtually reared on that of Kant, and almost knew it by heart, in which case it would be small wonder that his reflections should take their point of departure from it. That his pragmatism was also positively influenced by Kant no one doubts; but then he himself says that the ancestry of pragmatism can be traced to Socrates; and if we are to

[3] Peirce's accounts of the date at which the Metaphysical Club was started and pragmatism introduced vary. See 5.12, 6.482, 6.490, and *Journal of Philosophy*, 1916, p. 719.

[4] "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object" (5.402). It will be noticed that I make little reference to this maxim in what follows. As a statement made in 1878 it is justly famous; but it is a mistake to base a discussion of Peirce's pragmatism on it. Considered relatively to the whole of Peirce's writings it is one of a class of statements that are unprecise.

[5] *Varieties of Religious Experience*, p. 444.

[6] *Coll. Ess. and Rev.*, p. 448.

[7] *Pragmatism*, pp. 46–7.

[8] *Thought and Character of William James*, II, p. 407n6.

take his words in such matters seriously, there is almost no classical philosopher by whom he has not been positively influenced.[9] Professor Perry's opinion seems, therefore, to be correct only in the sense that pragmatism was not absolutely original with Peirce. No important conception is absolutely original; as Peirce says, "Any philosophical doctrine that should be completely new could hardly fail to prove completely false" (5.11). James's judgment, that Peirce "expressed in the form of an explicit maxim" what was implicit in certain previous philosophies, particularly in the "great English way of investigating a conception,"[10] is probably correct, though Peirce's explicit contribution was in its totality far more profound than the maxim of which James was thinking.

The immediate ancestry of pragmatism Peirce ascribed to members of the Metaphysical Club. He emphasizes particularly the influence of Chauncey Wright (5.12, 5.64), and Green he calls the "grand-father of pragmatism," for "he often urged the importance of applying Bain's definition of belief, as 'that upon which a man is prepared to act',"[11] from which definition "pragmatism is scarce more than a corollary" (5.12).

But already in the second of the 1868 papers Peirce says that the meaning or "intellectual value" of a thought "lies ... in what this thought may be connected with in representation by subsequent thoughts; so that the meaning of a thought is altogether something virtual" (5.289). And in 1871, in his review of Campbell Fraser's edition of Berkeley's Works, he offers a "rule for avoiding the deceits of language": "Do things fulfill the same function practically? Then let them be signified by the same word. Do they not? Then let them be distinguished."[12] These passages are rudimentary, but they touch the core, respectively, of the doctrine and the purpose of pragmatism.

The Purpose of Pragmatism. What did Peirce intend to accomplish by the formulation of pragmatism? In 1878 he intended it as a principle making for the clarification of 'ideas', and to this essential purpose he clung always, expressing it more fully as the years passed. He emphasizes that the clearness of ideas which his pragmatic maxim, then unnamed, is designed to attain is not clearness in either the Cartesian or the Leibnizian senses, which he regards as the two "grades of clearness" inferior to the pragmatic. The clearness which Descartes prescribed amounts to a psychological sense of agreeableness,

[9] One of Peirce's favorite classical ancestors of pragmatism is Berkeley (cf. 5.11, 6.482; Perry, II. p. 425). But he regards Spinoza (!) too as a prominent ancestor (cf. 6.490, 5.412).

[10] *Coll. Ess. and Rev.*, p. 434.

[11] Cf. Bain, *The Emotions and the Will*, 3rd ed. (1875), p. 505.

[12] *North American Review*, vol. 113 (1871), p. 469.

derived from introspection, and neglects the possibility that ideas which seem clear may in fact not be so. The 'distinctness' which Descartes further prescribed is intended to put ideas to the test of 'dialectic': they must remain clear when their consequences are examined, and in any context of discussion that they may enter. The Leibnizian criterion of distinctness emphasized the importance of abstract definitions. This requirement Peirce regards as important in setting beliefs "in order," order being "an essential element of intellectual economy, as of every other" (5.392). That Peirce himself was, incidentally, much concerned with this aspect of 'clearness' is shown by his considerable attention to the theory of terminology (Cf. 2.219–26, 5.413, 5.611). But the criterion of suitable abstract definition is hardly sufficient to guarantee that the members of a linguistic group should know each with relative precision what he is talking about and communicate unequivocally. This the pragmatic criterion is designed to achieve. (Cf. 3.457, 5.206).

Pragmatism "is, in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and abstract concepts" (5.464). The most important application of the pragmatic method is therefore to philosophical inquiry. Suppose that two philosophers are engaged in dispute. The question which they are disputing, let us further assume, cannot be settled by appeal to the observation of facts. Yet each philosopher claims that the other is wrong, and moreover, claims to prove it. In such a situation, "pragmatism maintains that ... the disputants are at cross-purposes. They either attach different meanings to words, or else one side or the other (or both) uses a word without any definite meaning" (5.6). Plainly a method such as pragmatism is necessary "for ascertaining the real meaning of any concept, doctrine, proposition, word, or other sign" (*ib.*). Pragmatism "will serve to show that almost every proposition of ontological metaphysics is either meaningless gibberish ... or else is downright absurd" (5.423). The reason is that the words of traditional metaphysics derive their meaning *merely* from abstract definition: a term is defined by others, these by others still, without "any real conception ever being reached" (*ib.*). Peirce's pragmatism, then, is a criterion of the meaning of words and sentences. It is not a criterion which simply legislates for the sake of convenience or elegance what the meaning shall be, but which is based on the way in which words and sentences are actually used; Peirce intends to make precise the criterion of meaning implicit in the linguistic intercourse of all men; and by the use of this more precise and explicit criterion we should be able to say, not only in actually doubtful cases but in every case, whether a word or sentence is or is not meaningful. "After all," Peirce wrote to James in 1904, "pragmatism solves no real problem. It only shows that supposed problems are no real problems."[13] It will be observed that Peirce speaks

[13] In Perry, *op cit.* II, p. 430.

sometimes of the meaning of words or sentences and sometimes of the meaning of 'ideas' or 'concepts'. It is more general, and at the same time more accurate, to speak of pragmatism as a criterion of the meaning of *signs*. For a sign may be either a purely linguistic sign, under which we may class such things as words, algebraic notation and visual diagrams; or it may be a thought, i.e. a mental sign, which is at least quasi-linguistic.[14]

Now there are two limitations to the kinds of signs the meaning of which pragmatism professes to determine. The first of these limitations is only implicit in Peirce, but the second he emphasizes on more than one occasion. (1) So far as words are concerned, pragmatism determines the meaning only of non-logical words; that is to say, it applies only to *descriptive* signs or *names* (whether of qualities or relations) and does not apply to such logical words as 'and', 'not', 'if', etc. So far as sentences or propositions are concerned, pragmatism applies only to *synthetic* sentences. (2) Pragmatism, according to Peirce, ascertains the meaning only of "intellectual" signs, i.e. signs " upon the structure of which, arguments concerning objective fact may hinge" (5.467). Thus he says that pragmatism has nothing at all to do with the meaning of the names 'red' or 'blue', "for red and blue name mere subjective feelings only"; pragmatism has "nothing to do with qualities of feeling," and "could two qualities of feeling be everywhere interchanged, nothing but feelings could be affected" (*ib.*). Pragmatism indeed has nothing to do with qualities of feeling, which are incommunicable; but in excluding from its domain names like 'red' and 'blue', Peirce confuses a feeling with the name of a feeling, and he fails to see, moreover, that a name may be the name of a feeling and yet more than merely that. And not only does he exclude names like 'red' from pragmatic interpretation but also proper names "or other designation[s] of an individual object" (5.429). Here again he seems to confuse a proper name with a demonstrative pronoun (cf. 3.460), and would apparently regard the former as purely demonstrative if he so regarded the latter. (In contemporary terminology, he confuses a 'proper' name with a 'logically proper' name).

If limitation (2) to the scope of pragmatic definability should not be a confusion, then it affects limitation (1), and the latter becomes a more drastic limitation. But even if it should not be confused in itself, i.e. as a separate point, it would at least be inconsistent with Peirce's fundamental opinions. For it would be a genuine limitation only if proper names and names like 'red' were purely demonstrative. In being a limitation to the scope of pragmatism it would really be contrary to pragmatism; for purely demonstrative names

[14] "All thought whatsoever is a sign and is mostly *of the nature of language*" (5.421; my ital.) Also, "... the woof and warp of all thought and all research is symbols, and the life of thought and science is the life inherent in symbols; so that it is wrong to say that a good language is *important* to good thought, merely; for it is of the essence of it" (2.220).

are repugnant (as we have already in some measure seen) to Peirce's conception of knowledge, on which pragmatism is in a sense based. I believe, however, that not only on this point – i.e. the limitation of the pragmatic criterion to 'intellectual' signs – but on others Peirce suffers from confusion rather than from serious internal inconsistency.

What is an Interpretant? Something can be called a 'sign' only when it has an 'object' and an 'interpretant'. But it must be pointed out that Peirce's various definitions of 'sign' contain a number of different emphases, depending upon what he has in mind in the place of discussion. Consequently, the definitions of 'object' differ, and so do, especially, the definitions of 'interpretant'. What is the most general statement of the sign-relation, the triadic relation of representation? We cannot say, for instance, that by 'object' Peirce means the extension of a sign, since that is what he means (or can mean) only in the case of names; nor can we say that by 'object' he means the 'referend' (as it is called today), for while a name or a map has a referend, we should ordinarily not say that the sign 'the' or the sign which we call an analytical inference has a referend. A case can easily be made out for such 'signs' as the pointing of a finger or a weathervane as having extension, namely, the thing pointed to or indicated. But in general it seems clear that while perhaps every name, including, if we must, the 'natural' signs and demonstratives, has extension (Peirce prefers Hamilton's term 'breadth' to 'extension'), not every sign has. Thus, contrary to Peirce's analysis, which holds that every sign is part of a triadic relation, it would seem that certain signs either do not have an 'object' or have one in a rather strained sense. If we turn to 'interpretant', the case would seem to be different: 'interpretant' *would* always seem to mean 'depth'. According to Peirce, in order that a sign should be a sign, it must have an explanation (2.230), a translation (5.594, 5.427), an interpretation (5.569) – in brief, an interpretant. it is rather important to emphasize that by 'interpretant' we mean 'possible interpretant'. "It is not necessary that the interpretant should actually exist"; an interpretant "*in futuro* will suffice" (2.92). So that every term, logical or non-logical, every proposition, synthetic or analytic, every inference, would seem to have an interpretant, whether in the form of a definition (actual or possible) or a consequence (actual or possible). But if 'interpretant' as applied to all terms (and logical plus non-logical terms constitute, after all, the whole of any proposition or inference) is synonymous with 'depth' it follows that no sign is purely demonstrative. This is the internal evidence. We have yet to consider Peirce's explicit utterances on the matter. Deferring them to the next section, let us make certain points that will be useful.

(1) We may distinguish, in Peirce, between psychical signs and non-psychical (or non-mental) or 'external' (5.569) signs. A psychical sign is a thought or cognition; an external sign is a written word, gesture, or other

physical instrument of representation. We may divide the external signs into linguistic signs on the one hand and 'natural' signs or 'physical symptoms' (3.361) on the other. Now Peirce holds, in many places, that the interpretant of a sign is 'mental'; or he often uses 'interpretant' as synonymous with 'thought' (e.g. 2.315, 2.274). Does he mean that every interpretant is a psychical sign, that is, an actual thought or cognition? May not the definition of a word be a linguistic formula, or the interpretant of a proposition another proposition? What Peirce means is that every sign must ultimately have significance for a mind (cf. 2.242, 2.274). And he sometimes speaks, not only of an interpretant but of an *interpreter* (e.g. 4.536). An interpretant implies an interpreter: every sign must ultimately have an interpretant that is a mental interpretant. Every sign, in other words, must have a translation or interpretation which is meaningful only to some mind.

(2) The concepts of interpreter and interpretant are capable of generalization. We may regard the 'interpreter' as the *system* in which a given set of signs occurs, the notion of a system implying rules or conventions both for the number and type of signs that will be admissible, and for the translation or transformation of a given sign into others. We may regard the 'interpretant' as the definition or translation of any sign within the system. The interpretant of a sentence is the class of its consequences, and any term is definable by means of the primitive terms of the system; the primitives too have an interpretant, both in the sense that they *could* be defined and in the sense that they are implicitly defined by the axioms in which they occur. Peirce perhaps suggests this generalization by referring to the interpreter as the 'quasi-mind' (4.536). But I believe he would insist that however generally the notions of interpreter and interpretant are understood, we must ultimately fall back, in order to give significance to the sign-relation, upon an interpreter that is a mind and upon an interpretant that is a thought in this mind.

(3) We saw that in so far as a sign is thought it is judicative, i.e. is a tacit assertion. In view of the fact that some signs are merely linguistic, and are, moreover, mere terms, does this require modification? It might seem that the definies of a definition could remain a non-assertive set of signs, even if thought. But in fact, such a sign, when interpreted by a mind, would, on the view of Peirce, be interpreted in an assertion. Most significant, however, is the fact that Peirce regards every linguistic sign (and probably, although on this I am not sure, every sign – cf. 2.264) as, if not actually assertive, tacitly assertive, or 'rhematic'. Peirce's term 'rheme' is the equivalent of what is now called a 'propositional function'. (Cf. 2.340–1; 4.438, 4.354; 2.250, 2.264). A rheme is an incomplete predication. Ordinarily a proper name, for instance, is not regarded as a predicate or propositional function. It is not a 'rheme'. But it may nevertheless be regarded as *rhematic*, in the sense that it must ultimately be interpreted as occurring in, and forming a definite part of, some assertion.

(4) The interpretant of a sign, being always itself a sign, whether a psychical or linguistic translation, is also a sign of the same object and is translatable by another interpretant. This may in turn be regarded as a sign of the same object, etc. Thus every sign has an indefinite number of interpretations, each a sign of the same object.

Now our account of how 'interpretant' is to be understood would be altogether satisfactory if it were not for the fact that Peirce distinguishes *three kinds* of interpretants. Our account of the interpretant as being a translation in terms of signs, of signs which interpret a given sign, has taken no cognizance of two other 'kinds' of interpretants. We shall see shortly that this threefold distinction is what underlies the distinction between 'intellectual' signs, of which pragmatism defines the meaning, and non-intellectual signs, with which pragmatism supposedly has nothing to do.

To cover the following threefold distinction, the most general sense of 'interpretant' would have to be, not 'depth' or 'consequence', but 'significant effect' (5.475). There are three kinds of interpretants or significant effects which a sign may produce in the interpreter (cf. 5.475, 4.536). There is, first, the 'emotional interpretant', which consists in a feeling produced by the sign. Every sign, whatever else it produces in the interpreter, produces some sort of feeling. But in particular, "there is almost always a feeling which we come to interpret as evidence that we comprehend the proper effect of the sign." This feeling is, then, a kind of 'feeling of recognition'. In many cases this feeling or 'emotional interpretant' is the only 'significate effect' which the sign produces. "Thus, the performance of a piece of concerted music is a sign. It conveys, and is intended to convey, the composer's musical ideas; but these usually consist merely in a series of feelings." So that the sign known as a musical performance has only an emotional interpretant. A second kind of significate effect may be produced by a sign "through the mediation of the emotional interpretant, and such further effect will always involve an effort." Peirce calls this the 'energetic interpretant'. He instances the command "Ground arms!" as having an energetic interpretant. In this instance the effort excited by the sign is a muscular effort, but it may be and in fact usually is, he says, no more than a mental effort. The third kind of interpretant – which we have hitherto identified with 'interpretant' in general – is the 'logical interpretant'. The logical interpretant of a sign is not a feeling or effort excited by it but *another* sign, a thought, which is a translation in the proper sense of the word. 'Intellectual' signs alone, on the view of Peirce under consideration, have logical interpretants. (The quotations in this paragraph are all from 5.475).[15]

[15] The three 'interpretants' are, in the only other place where they are distinguished (4.536), called 'immediate', 'dynamic' and 'final' interpretants, respectively. These terms are taken for granted in correspondence of 1909 with Lady Weiby (printed in Ogden and Richards, *The Meaning of Meaning*, Appendix D, sec. 6).

Peirce's 'Limitation' of Pragmatism: On Purely Demonstrative Signs. The conception of other than logical interpretants appears in two of Peirce's writings, both of 1906. This is a very late date in his literary career, and one cannot help feeling that the crowded terminology with which the later papers are laden breeds confusion in his thought, making for views very unlike those earlier emphases we have encountered. But it is not necessary to rest with a mere conclusion that Peirce is inconsistent. On the contrary, the proper judgment should be that there are two emphases in Peirce, one fundamental, the other not. With respect to the concept of 'interpretant', it can be shown, I believe, that the great majority of Peirce's uses of this word regard it not as any 'significate effect' of a sign but as another sign interpreting or translating the first.[16] But more conclusive is the fact that upon this sense of interpretant depends Peirce's whole conception of the character of thought or knowledge. While the distinction between three kinds of possible significate effects is a sound one in itself (for the distinction between feeling, the sense of duality and cognition, on which it is based, is essentially sound), the terming of two kinds of significate effects 'interpretants' is misleading and infelicitous (just as it would be misleading to call 'feelings', and instances of the 'sense of duality', 'kinds of cognition'). By 'interpretant' Peirce should have meant 'logical interpretant'; from which it follows that a sign which has *only* an emotional (or energetic) 'interpretant' ought not to have been called a 'sign'. "A sign is not a sign unless it translates itself into another sign in which it is more fully developed.... Thought must live and grow in incessant new and higher translations, or it proves itself not to be genuine thought" (5.594).

Let us return to Peirce's opinion that the names 'red' and 'blue' are not 'intellectual' signs. He says: "The qualities of hard and soft strikingly contrast with those of red and blue; because while red and blue name mere subjective feelings only, hard and soft express the factual behaviour of the thing under the pressure of a knife edge" (5.467). 'Hard' is thus presumably an 'intellectual' sign, with a logical interpretant, but 'red' is a sign the 'meaning' of which is given by a feeling which the name suggests. In order to explain what 'red' means we do not give an abstract description but rather excite the feeling-quality which it denotes. 'Red' therefore has only an emotional interpretant; pragmatism cannot undertake or pretend to give the meaning of such a sign. Does Peirce mean that 'red' is purely demonstrative, that it has a denotation but no depth? On the internal evidence, derived, as we said, from Peirce's general theory of signs and of knowledge, there should be no purely demonstrative signs. What are Peirce's explicit statements on the matter?

Demonstrative pronouns, which are as likely to be purely demonstrative as any linguistic sign, are classed by Peirce as 'indices', signs which have some physical relation or other to their objects. Thus a demonstrative pronoun (or

[16] E.g. 1.542, 2.94, 2.228. 2.242, 2.303, 5.569.

adjective) 'calls attention' to a physical object. An index may be a non-linguistic (i.e. a 'natural') sign, for instance, a weathervane, a pointing finger, or fever as an index of illness. The question is whether Peirce regards any sign as a *pure* index, a sign purely denotative. We could of course make a catalogue of every reference by Peirce to the word 'index', but that would be futile and devoid of clarity. Let us choose one or two references which we can be assured are deliberate and fully conscious. In his definition of 'sign' for Baldwin's Dictionary, Peirce says: "An index is a sign which would, at once, lose the character which makes it a sign if its object were removed, but would not lose that character if there were no interpretant. Such, for instance, is a piece of mould with a bullet-hole in it as a sign of a shot; for without the shot there would have been no hole; but there is a hole there whether anybody has the sense to attribute it to a shot or not" (2.304). Is Peirce saying that an index may possibly have no interpretant and thus be a pure index? Not at all. He is not saying that an index may *function* as a sign without an interpretant, but that it would retain its *character as an index*, its factual or physical connection with an object (cf. 2.285–6, 2.299). (He is thinking here mainly of 'natural' or non-linguistic indices). The sign 'horse', which Peirce calls a 'symbol', or sign in virtue of its establishment by convention, would not retain its character as a symbol without an interpretant, though it would retain this character even if its object did not exist. All this is clear from a passage in another definition for Baldwin's: "Of course, nothing is a sign unless it is interpreted as a sign; but the character which causes it to be interpreted as referring to its object may be one which might belong to it irrespective of its object and though that object had never existed, or it may be in a relation to its object which it would have just the same whether it were interpreted as a sign or not" (2.308). And finally, in the definition of 'index' for Baldwin's, Peirce says: "It would be difficult if not impossible, to instance an absolutely pure index..." (2.306). As a kind of addendum, we should not overlook the fact that at least in his diagrammatic classification of all signs (cf. 2.264) Peirce regards every sign not actually assertive (i.e. not propositional or argumentative) as being rhematic, that is (as I believe Peirce's views imply), interpretable from the point of view of the position it would occupy in an assertion.

'Red', then, if indexical, is not purely indexical. Why Peirce should have considered 'hard' and 'soft' as expressing the factual behavior of a thing, and 'red' and 'blue' as not, is a little difficult to understand. For on other occasions it must surely have been evident to him that 'hard' and 'soft' likewise *may* be regarded as denoting qualities of feeling – as in fact they commonly are. 'Red' and 'blue', 'hard' and 'soft', all of them do have feelings as significate effects, as have other signs in varying degrees. But 'red' and 'blue', if they are to be regarded as signs and not mere causes producing mere effects, are pragmatically definable, in physical definitions, no less than 'hard' and 'soft'. And what

of proper names? They certainly are not *ordinarily* defined pragmatically, and in fact even less commonly than 'red' and 'blue'. But they are pragmatically *definable*; and if they were not we should have no instrument by which to discriminate the use of a proper name like 'King Henry V' from the use of a name like 'The Absolute'. Peirce's conception of 'intellectual' signs is thus confused. All signs are definable, and only logical signs are exempt from the pragmatic criterion of meaning. Pragmatism does not pretend to deal with the *feeling* of red, nor with any feeling whatsoever, but it does deal with the *name* 'red', and lays down a rule for defining it as it does for all other names (descriptive signs). So that we may assume only the one limitation to pragmatism that we mentioned above. And we may repeat that Peirce is not radically inconsistent in this matter. He himself can be found to explicitly substantiate the foregoing interpretation: "To say that a body is hard, *or* red, or heavy, or of a given weight, *or has any other property*, is to say that it is subject to law and therefore is a statement *referring to the future*" (5.545; my ital).

General and Special Analyses of Meaning. We may distinguish two kinds of usage of the word 'meaning' in Peirce. One is more general than the other. In the general sense 'meaning' is a relation, and none other than the sign-relation, which is triadic. This relation (to repeat what will bear repetition) involves a sign considered materially, its object, and thought (more accurately, some interpreter's mental interpretant, ultimately involved in all representation). 'Meaning' in the general sense, that is, the sign-situation, is an important presupposition of pragmatism. Signs cannot be said to have a meaning in a special sense apart from their relation to some interpreter's conception. In this general sense, then, we understand by 'meaning' the meaning-situation or -relation, or conditions under which a sign has meaning in a special sense to be explained.

Now many analyses of the 'meaning of meaning' fail to take into consideration the meaning-relation, and they are therefore inadequate; but they are not illegitimate, for they aim to define 'meaning' in a more special usage. We ordinarily, when we speak of the 'meaning of a sign', do not intend to speak of the meaning-relation even though we may be aware of it as underlying the use of signs. What we intend to speak of when we use the expression 'meaning of a sign' may, for example, be a referend; or it may be a definition, or whatnot. Peirce's pragmatism assumes that we refer to the definition when we speak of a sign's meaning; that is, to the logical interpretant. But, of course, anyone can say that by 'meaning' (in this special sense) we mean 'definition'; the question is, What *kind* of definition; and it is this which pragmatism answers. But before we go into detail we must convince ourselves that Peirce does use 'meaning', in the special sense, as logical interpretant. ('Logical interpretant', as we have indicated, is a wider term than 'definition', covering

translations of propositions as well as of terms). If we examine the actual text of Peirce we find not one but three special senses of 'meaning'.

(1) "A meaning is the associations of a word with images, its dream exciting power" (4.56). This statement, fraught with an emphasis against which Peirce himself inveighed repeatedly, may safely be considered a casual and unimportant one. He knew well that no word has the same image-associations for any two persons, and that such a view was unduly psychological. But in view of the fact that Peirce speaks of the emotional interpretant, the present statement is instructive in showing how in spite of himself he sometimes was tinged with a strain of psychologism in matters logical.

(2) Two other passages in Peirce require explanation. (*a*) The first is 2.293, where he speaks of "the object of a symbol, that is to say, its meaning." (*b*) The second is 1.339, where he does nothing less than distinguish between the 'object' of a sign, its 'interpretant' and its 'meaning'; and calls the 'object' a 'representation'.

The most likely explanation of these passages – and by 'explanation' we mean primarily explication – is to be found in a distinction of Peirce between the 'immediate object' and the 'dynamic object' of a sign (4.536). The dynamic object of a sign is its object in the familiar sense: it is the actual thing or fact to which the sign applies, its referend, or what it denotes. The immediate object, on the other hand, is itself a sign. Peirce is very vague on the concept of 'immediate object' and says little about it.[17] An objection at once arises, namely, if the immediate object is a sign, then would not a sign and its immediate object be mutually translatable, and are not mutually translatable signs 'interpretants' of one another? Peirce's own explanation of the immediate object as "the Object as the Sign itself represents it, and whose Being is thus dependent upon the Representation of it in the Sign" (4.536) – is too obscure to be speculated upon. There are, however, two explanations which seem plausible. (i) If we think of signs standing in temporal relation to one another – in other words, of the series of cognitions – then a cognition *B* which precedes a cognition *C* may be regarded as the latter's immediate object (both having the same dynamic object). *B* may in turn have an immediate object, *A*, preceding it, and *C* would be its interpretant. And so on. A distinction between interpretant and immediate object would thus be based on temporal order; and it would be accurate to say that relatively to different cognitions a given cognition is both interpretant and immediate object. (ii) If we consider, not thoughts but linguistic signs generally, 'immediate object' may still be regarded as a relative conception, understood, however, in terms of greater specificity of translation rather than of temporal priority. With respect to a term, the immediate object would be the denotation expressed in signs. Thus, the immediate object of 'man' would be 'Jones', 'Brown', etc., or in general, the class of proper names whose dynamic objects

[17] See correspondence in Ogden and Richards, *op. cit.*, p. 289; also, 2.293n.

are actual men. This would be distinct from the interpretant, which would be, e.g., 'bipedal animal, etc'. But a proper name, which is an immediate object relative to 'man', might itself be an interpretant relative to a more specific spatio-temporal designation. And so on. (The temporal series of thought-signs would not seem to require preceding thoughts to be more specific denotatively, though this is likely to be the case when the series as a whole is young).

To return to passages (*a*) and (*b*), in (*a*) Peirce uses 'meaning' as *immediate* object; in (*b*) he uses 'object' as immediate object, 'meaning' as the logical interpretant in so far as it is the conventional (customary) linguistic definition or translation, and 'interpretant' as the logical interpretant in so far as it is a cognition or actual mental translation.[18] Having made the senses of these usages clear, we can see without much difficulty that 'meaning' is used loosely, in contexts where it is not the main term and where no great harm results from its being used synonymously with concepts like 'interpretant' and 'immediate object' that differ only relatively.

(3) Peirce's real view is that 'meaning' in its special sense is synonymous with 'logical interpretant'. "Meaning is, in its primary acceptation, the translation of a sign into another system of signs...." (4.127). "The meaning of a sign is the sign it has to be translated into" (4.132). "By the *meaning* of a term, proposition or argument, we understand the entire general intended interpretant...." (5.179). The meaning of a proposition, for instance, would be the class of its necessary consequences (cf. 5.165).

The meaning of a sign is its logical interpretant. But we only begin the problem. A logical interpretant, being another sign, has itself a logical interpretant, and so on. Which of these is the 'meaning' of a given sign? In the case of a term, the logical interpretant may be nothing more than an abstract definition, and we may never reach "any real conception" (5.423) in this process of defining. And likewise in the case of propositions, to say that the meaning of a proposition is the set of its consequences is valuable only "as the beginning of an analysis of what the meaning of the word 'meaning' is" (5.165). For every proposition, whether logical or synthetic, has consequences, deduced in accordance with rules or leading principles. It is only a certain *kind* of consequences that will distinguish a synthetic from a logical proposition, and, most important for our purpose, a genuine or meaningful synthetic proposition from one that is pseudo-synthetic or meaningless. Hence while the foregoing analysis of meaning as the logical interpretant has been necessary, "it is by no means sufficient to cut off all nonsense" (5.179). We require a formula for a certain kind of logical interpretant, and this is supplied by pragmatism.

[18] Peirce says here (i.e. 1.339) that the series of objects of a sign (like the series of its interpretants) is infinite. That is – I take it – there is no limit to specificity in the successive series of signs called 'immediate objects'.

The Pragmatic Criterion of Meaning. I believe it is desirable to separate Peirce's enunciations of pragmatism into two classes. On the one hand, we may extract from him a statement of pragmatism the language of which is modern and invites comparison with current discussion along similar lines. On the other hand, there is a different kind of statement of pragmatism, less clear, motivated by the strong influence on Peirce of classical philosophic tradition as well as by his preoccupation with the mushroom pragmatism that sprang up in the neighborhood of 1900. In this second class of utterances Peirce's pragmatism speaks, among other things, of an 'ultimate' logical interpretant as being the meaning, and states what this ultimate interpretant is. I do not believe that the notion of an 'ultimate' interpretant is required for a statement of Peirce's pragmatism. In such a statement we need only emphasize that the meaning of a term or proposition is given by a definite kind of logical interpretant, and specify what that is. In this and the next section I want to proceed with such a statement.

Consider any term.[19] The meaning of this term is given by an expression mentioning certain properties. This translating expression or logical interpretant will be equivalent to the original term. But the properties mentioned by it will not be any properties. They will be sensible properties. Pragmatism holds that a term has meaning if, for any statement in which it occurs, another statement about sensible properties is always substitutable. A term has meaning, in other words, if it is definable by other terms describing sensible properties. The way in which, genetically speaking, these other terms, which may not in turn be thus defined, acquire meaning, is by being *associated* or *correlated*, in their usage, according to empirical convention, with such properties. Thus the term "hard" is a meaningful term because it is equivalent to the expression "not scratchable by many other substances" (cf. 5.403). But it is somewhat misleading to speak merely of the meaning of terms, as if terms could have a meaning apart from their possible employment in a proposition. Let us continue, in the manner just suggested, to speak of the meaning of terms-occurring-in-statements. Then we may say that the term 'hard' is a meaningful term because the statement (e.g.) "This is hard" is always interchangeable with the statement (e.g.) "This will not be scratched by many other substances." It may be held that by speaking of terms in this manner we can say *whether* a term *has* meaning or not, but not what the meaning of a term *is*. Such an objection, if not properly qualified, is likely to suggest a hypostatic conception of meaning that is not Peirce's, despite an impression sometimes given by his words. When we say that pragmatism "gives the meaning" of terms and propositions, we should be understood as saying that pragmatism states the conditions under which a term or proposition can legitimately be

[19] 'Term' will hereafter be understood to mean 'name'; 'proposition' to mean ' synthetic proposition'.

called meaningful, not that pragmatism labels an entity 'the meaning'. If we do speak of "the meaning" we refer to a logical interpretant of a certain kind (which we have just begun to describe); 'the meaning' of a proposition will be a certain kind of equivalent formula; 'the meaning' of a term will be an equivalent expression. Pragmatism will be the view that terms or propositions are meaningful if they have logical interpretants of a certain character; or in the other way of stating the matter – not objectionable if we remember the caution against hypostasis – the view that 'the meaning' of terms or propositions 'consists in' a certain kind of logical interpretant.

We were saying that the statement containing the translating expression of a term occurring in a given statement was one that asserted something about 'sensible properties'. This is not specific enough, and although we cannot be as clear as we should like until we speak of the meaning of propositions in addition to that of terms, we may nevertheless move another step forward. Suppose we ask, to choose a good example of Peirce, What is meant by 'lithium'? An ordinary definition might say, It is that element which has an atomic weight of nearly 7. But according to pragmatism, the meaning of 'lithium' is given in some such statement as the following:

"If you search among minerals that are vitreous, translucent, grey or white, very hard, brittle, and insoluble, for one which imparts a crimson tinge to an unluminous flame, this mineral being triturated with lime or witherite rats-bane, and then fused, can be partly dissolved in muriatic acid; and if this solution be evaporated, and the residue extracted with sulphuric acid, and duly purified, it can be converted by ordinary methods into a chloride, which being obtained in the solid state, fused, and electrolyzed with half a dozen powerful cells, will yield a globule of a pinkish silvery metal that will float on gasoline; and the material of *that* is a specimen of lithium'. (2.330).

This is not an abstract definition, or *mere* interpretant. It is, as Peirce says, a 'precept'. "It tells you what the word lithium denotes by prescribing what you are to *do* in order to gain a perceptual acquaintance with the object of the word" (*ib.*). The pragmatic criterion holds that to predicate any term of some object "is equivalent to declaring that a certain operation ... if performed upon that object, would ... be followed by a result of a definite general' (5.483). We can now be a little clearer as to what kind of reference to sensible properties is contained in the logical interpretant of 'lithium' or of 'hard': it is a reference to a definite *operation* leading to a definite *sensible result*. A predicate is a meaningful predicate if (and only if) it is definable in terms of a type of sensible result following a type of operation upon that of which it is predicated. And any statement that contains a meaningful predicate is nothing less than a kind of *rule*. For the statement to which it is equivalent asserts that when a definite operation is performed, a definite sensible result follows. This is nothing but a rule or formula or 'precept' for gaining 'perceptual acquaintance'.

Peirce's emphasis on 'precept' and 'operation' is in effect an emphasis that meaning is something *public*. We properly explain the meaning of a term to someone not by eloquently attempting to evoke familiar images in his mind but by prescribing how he can "gain perceptual acquaintance" with what the word denotes. The appeal is not primarily to imagination but to tests that can be undertaken by everybody. All sorts of images and feelings are associated with any term or proposition thought about, but we must not "mistake a mere sensation accompanying the thought for the thought itself" (5.401). Thought can be expressed only in language; and since language (understood as inclusive of 'natural' signs) is the instrument of social communication, it is successful to the degree that what it conveys is publicly intelligible. And we employ it successfully if we define our terms on the basis of publicly observable operations. The meanings of our words, that is to say, are established by correlating these words with what is repeatable and universally observable. But it must be emphasized that it is not the correlation of a term with the sensible merely as sensible on which Peirce's pragmatism insists. It is with the sensible in so far as it is public, and this is why we speak of the sensible in so far as it is the result of operations. Such a sensible result is "of a definite general description"; the merely sensible (or 'sensuous'), on the other hand, is private, variable and of a particular quality. James, who preached that terms must have sensible import, neglected (perhaps intentionally) this consideration. His purpose was simply an appeal to the concrete as a wholesome influence in philosophy, and the distinctions implicit in Peirce's pragmatism could never win his interest or seem to him very important. But for Peirce these distinctions were necessitated by his analysis of knowledge, which convinced him that in a criterion of meaning it was not sufficient to turn merely to the concrete but to the concrete in so far as it is public.[20]

From the pragmatic analysis of terms to that of propositions it is evidently no great step, and we have remarked that to deal with the meaning of terms is at least tacitly to deal with that of propositions. In Peirce there is virtually no stress on a distinct treatment of the two; he does not say explicitly that the pragmatic analysis of propositions is subordinate to that of terms in some such respect, for instance, as this: a proposition is a genuine synthetic proposition because all of its (non-logical) terms are conventionally associated with empirical properties. But something of the sort is implied by his analysis. For he wants to say that a proposition has meaning only if its necessary consequences, which constitute its logical equivalent, can be experimentally inves-

[20] "Man is not whole as long as he is single ... he is essentially a possible member of society. Especially, one man's experience is nothing, if it stands alone. If he sees what others cannot, we call it hallucination. It is not 'my' experience, but 'our' experience that has to be thought of; and this 'our' has infinite possibilities" (5.402n).

tigated. A proposition of metaphysics also has a set of necessary consequences, none of which may be thus investigable. That a proposition does have experimental consequences is due to the fact that the descriptive terms occurring in it satisfy the pragmatic criterion.

The Criterion with Respect to Sentences. Any synthetic proposition is 'admissible', according to Peirce, "... provided it be capable of experimental verification, and only insofar as it is capable of such verification. This is approximately the doctrine of pragmatism" (5.197). The pragmatic method is, after all, "no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today" (5.465). What is it to say that a proposition is 'admissible' or 'inadmissible'? Since pragmatism is a theory of meaning, an 'inadmissible' proposition is a meaningless proposition. So that by the statement just mentioned, correctly termed 'approximate', since we must explain more fully the sense of 'verify', a meaningless proposition is one that is unverifiable. Every sentence must have, not merely consequences, but consequences the truth or falsity of which can be examined by experimental methods. The pragmatic criterion of meaning is implicit in the method of science. Any sentence means, to the scientific investigator, "that if a given prescription for an experiment ever can be and ever is carried out in act, an experience *of a given description* will result...." (5.411; my ital). A proposition, then, is meaningful if it is verifiable. Roughly we could say that according to pragmatism every synthetic proposition must be understood in terms of experience. But 'experience' is a treacherous word, and the pragmatic criterion might easily be abused to such an extent that any proposition of traditional metaphysics would be forced into harmony with it. If pragmatism is to be explained by means of the word, it must be public experience that we speak of, consisting of public operations, and public in the sense that scientific experiment is. With this qualification of the meaning of 'experience', the argument that propositions of transcendental metaphysics are 'experiential' though not in the sense of the word assumed by natural science, could not arise.

What is it that Peirce does not intend to imply by his pragmatic criterion of verifiability for propositions? By 'verifiable', first of all, he does not mean 'conclusively verifiable'. The pragmatic criterion does not assert that in order for a proposition to be meaningful it must be possible to either verify or refute that proposition once for all. If only those propositions were deemed meaningful which could be known conclusively to be either true or false, then by the principle of fallibilism no proposition at all would be meaningful, and certainly not the general hypotheses of natural science. No experiment by which we gather evidence for (or against) a hypothesis is isolated and completely independent. When we speak of 'an experiment' we mean not

literally a single experiment but a *collective* experiment, consisting in fact of a series of operations connected with one another (5.424). Pragmatism holds that a statement is meaningful if it is possible to gather evidence for or against it, not, if we can know definitely and precisely under what conditions it is true and under what conditions it is false. A conclusively verifiable sentence would be an atomic or intuitive sentence, and most of the sentences that we use are more general than perceptual judgments, which alone might be deemed atomic. But pragmatism does not even require all statements to be ultimately resolvable into atomic statements, or as we should say today, to be truth-functions of atomic statements.[21]

The proposition which gives the meaning of another, i.e. the logical interpretant which pragmatism calls the meaning, is *general*. It is a formula, stating that *whenever* certain operations are performed certain results follow, and these are definite operations and definite results. The meaning of "This stone is hard" is: "Whenever I attempt to scratch this stone with a sharp edge and a standard pressure, I fail." The meaning is in terms, not of a specific operation and a specific result – which would be merely in terms of a particular sense experience – but of a kind of operation and a kind of result. The meaning is thus given in a 'conditional' proposition. A statement is meaningful because it is possible to say what the operations and results are in terms of which it is understood. The conditional statement which gives the meaning of any proposition is "the general description of all the experimental phenomena which the assertion of the proposition virtually predicts" (5.427). Peirce intends to say that the conditional translation which gives the meaning is a *prescription* for attaining definite experimental results upon definite experimental operations. Clearly there is no limit to the prediction (or prescription) of experimental consequences involved in any synthetic sentence. "To call the stone *hard* is to predict that no matter how often you try the experiment, it will fail every time. That innumerable series of conditional predictions is involved in the meaning of this lowly adjective" (1.615). This limitless reference, involved in any sentence, to the prediction of experimental results, is what Peirce means by his declaration that "the rational meaning of every proposition lies in the future" (5.427). Every synthetic sentence involves, in its very meaning, an infinite series of experimental confirmations. The pragmatic analysis, by its translation of any synthetic sentence, shows such a sentence to be general, and therefore to be incapable of final confirmation. Far, then, from construing every sentence ultimately in terms of intuitive or atomic

[21] In 1901 Peirce says, "It can hardly be maintained that, when Poincaré says that there is no physical law whatever which will not be rendered more certain by every new confirmatory experiment, he is depriving those laws of all meaning as propositions" (6.370).

sentences, pragmatism is actually one form of the argument against intuition or incorrigible verification. It may be regarded as a bulwark of fallibilism.

If we wanted to state pragmatism concisely, we could do it some what as follows. Every statement has consequences; but only those statements are genuinely synthetic which have sensible or experimental, i.e. confirmable, consequences. Each consequence of a statement is a logical interpretant of that statement. Any single interpretant, however, or any finite class of interpretants, is only a partial translation, and cannot be said to be the 'meaning' of the statement. As the meaning of a given statement we require another statement that is general, and this statement will be a definite kind of logical interpretant, which we may conveniently call the "pragmatic interpretant." It will be, in effect, a *formula for the entire class of confirmable consequences* of a statement; it will illuminate the statement, so to speak, by revealing its logical equivalent. Pragmatism is the doctrine that the meaning of a synthetic sentence is its pragmatic interpretant; or in other words, that no synthetic sentence has meaning unless it has a pragmatic interpretant.

In the succeeding sections I propose to dwell on the scope and implications of pragmatism. It is desirable to consider pragmatism's relation to other essentially empirical views which on certain points share common ground with it. One of these is positivism, another is the pragmatism of James. In the case of positivism I shall not to the least extent enter into a discussion of the views of those men generally known as positivists, but consider only Peirce's attitude toward them and the movement they represent, regardless of whether or not he understood them perfectly; it is sufficient for us that this attitude makes clearer his own pragmatism. In the case of James, whose enunciation of pragmatism has been better known and more influential than that of Peirce, it seems profitable to consider the relation of his pragmatism to Peirce's both in the latter's eyes and in fact.

Pragmatism and Positivism. Peirce disposes of the possible suggestion that his pragmatism can be called a "thorough-going phenomenalism" (5.428). Phenomenalisin lays emphasis on the phenomenal interpretation of signs, that is, on a sensuous interpretation. Peirce admits that a "thorough-going phenomenalism" would be a "kind of pragmatism." But we have seen enough to understand why, far from being a mere method of sensuously interpreting signs, pragmatism "on the contrary, eliminates their sential element, and endeavors to define the rational purport...." (*ib.*). We must once again recall the distinction between the material quality of cognition (the sensuous) and cognition; between that which is inseparable from thought yet insufficient, and thought properly speaking, which has the character of representation between meaning as the set of images associated with a sign, and as the formula for the publicly ascertainable definition or

confirmation of a sign. What Peirce always calls the "rational purport" or "rational meaning" is expressed by the pragmatic interpretant in public, communicable, cognitive terms.[22]

Although Peirce finds a pragmatic strain in a number of preceding philosophers, he credits Comte with perhaps a predominant share (cf. 5.11, 2.7, 6.273). In Peirce's words, Comte formulated the maxim that "no hypothesis ought to be admitted, even as a hypothesis, any further than its truth or falsity is *capable* of being directly perceived" (5.198). Comte was correct in condemning hypotheses that were not 'verifiable'; but the important thing, in Peirce's opinion, is to understand the proper import of this word. The positivistic conception of verifiability is perhaps the chief point of distinction between positivism and pragmatism. Comte's works, says Peirce,

> "are warm (as they say in Hide and Seek) to living truths, although they are invariably most inaccurately analyzed and formulated. For example, nothing can be truer than that a hypothesis is good for nothing unless it is, as Comte says, 'verifiable', provided this means that the hypothesis is of such a nature that, if true, it will lead to correct anticipations as to the character of percepts and diminish the number of surprises; but Comte's definition, that a verifiable hypothesis is one whose substance is of such a nature as to be capable of being itself directly perceived, makes his maxim an arbitrary and indefensible limitation of useful knowledge. The past, for example, is of its nature incapable of being directly perceived, and therefore, according to Comte (too literally taken), we ought not to believe at all that there ever was any past, and, as he proposes to give up the word 'cause' altogether, so he ought to have given up the preterit definite and indefinite of all verbs."[23]

The important thing, after all, is the proper analysis and formulation of pragmatism, not merely its adumbration; and Peirce may be justified in taking Comte's words literally if by so doing he can reveal the inadequacy of analysis

[22] "Suppose two men, one deaf, the other blind. One hears a man declare he means to kill another, hears the report of the pistol, and hears the victim cry: the other sees the murder done. Their sensations are affected in the highest degree with their individual peculiarities. The first information that their sensations will give them, their first inferences, will be more nearly alike, but still different; the one having, for example, the idea of a man shouting, the other of a man with a threatening aspect; but their final conclusions, the thought the remotest from sense, will be identical and free from the one-sidedness of their idiosyncrasies" [Review of Fraser's ed. of Berke1ey, *N. Amer. Review*, Vol. 113 (1871), p. 455].

[23] Review of L. Lévy-Bruhl's *The Philosophy of August Comte*, in *Nation*, Vol. 78 (1904), p. 336. Cf. 2.511n.

and lack of rigor of formulation inherent in it. He attributes the feebleness of Comte's analysis (in a characteristic charge which he makes against many others) to a pleasant but unfortunate habit, that of "cherishing contempt for the close study of logic" (5.11). But Peirce finds a similar conception of verifiable hypotheses in others to whom he would not attribute such a vice – for instance, Poincaré, Mach and Karl Pearson. The positivistic conception of verifiability, on Peirce's view, springs from a failure to grasp thoroughly the distinction between the cognitive and the merely perceptual, that is, from a failure to understand the character of knowledge.[24] A proper understanding of the character of knowledge penetrates to the fallibility of all knowledge, to the impossibility of finality in verification.

The sensationalistic atomism of the positivists regards the 'real' as consisting in the 'first impressions of sense'; what Peirce regards as the genuinely cognitive it labels 'fictitious' or 'subjective'. All the complex intellectual operations are conceptual devices or instruments whose sole purpose is to subserve the reception of sense-impressions. But for Peirce these so-called 'first impressions of sense' are not such at all: there are no purely specific and isolated sense-impressions; there are only relatively complex percepts, this complexity being always discoverable on subsequent (i.e. retrospective) analysis. And moreover, even these percepts are a necessary but insufficient constituent of knowledge. Sometimes (in other language, no longer speaking of either 'impressions' or 'percepts'), the view of Peirce is set over, by positivists, against empiricism, which is said to appeal, as its cardinal tenet, to the authority of 'immediate experience'. But "as for *immediate* experience, ... it is known to us as immediate only inferentially."[25] The "method of prediction and experimentation has proved the master-key to science; and yet ... Professor Pearson tries to persuade us that prediction is no part of science, which must only describe sense-impressions."[26] On the contrary, to say that a hypothesis ought to be verifiable is to say that "it ought to be little more than a ligament of numberless possible predictions concerning future experience, so that if they fail, it fails" (5.597). On Peirce's judgment of the positivists, their analysis fails to understand that it is the predictive character of a hypothesis which makes it a *meaningful* statement in the first place.

Peirce's Realism. Against the nominalistic view of the positivists, that genuine cognition consists in the reception of sense-impressions and that the intellectual processes are merely convenient devices for the organization and ordering

[24] Cf. 5.597, and review of Pearson, *Pop. Sci. Mo.*, Vol. 58.

[25] Review of English trans. of Mach's *The Science of Mechanics*; *Nation*, Vol. 57 (1893), p. 252.

[26] Review of Pearson, *loc. cit.*, p. 305.

of these sense-impressions, Peirce opposed his realism. He says that a "strenuous insistence upon the truth of scholastic realism, or a close approximation to that..." is one important characteristic distinguishing his pragmatism from positivism (5.423). Often he calls himself a follower of Duns Scotus in this matter (e.g. 4.50).[27] Perhaps no theme is so recurrent and so vehemently reiterated as this belief in realism. Whatever Peirce finds susceptible of criticism in another thinker he is sooner or later likely to brand "nominalistic," often with remote relevancy. In spite of this voluminousness it is amazing that a clear or concise statement of his realism is not to be found in his writings. Very significant, however, are his remarks that the view which he holds is "well-stated by ... Francis Ellingwood Abbot in the Introduction to his *Scientific Theism*" (5.423); and that this book "has so clearly and with such admirable simplicity shown that modern science is realistic that it is perhaps injudicious for me to attempt to add anything on the subject" (4.1). He says also that he himself had formerly "acknowledged that the tendency of science has been toward nominalism," but that Abbot had convinced him of the superficiality of the nominalistic aspects he had pointed out, and that science had in fact been and must always be realistic (1.20; cf. 4.50). In view of the long digression that a thorough discussion of Peirce's own pronouncements on realism would involve, I am going to take his statements about Abbot literally and adopt the unorthodox procedure of considering only the latter's formulation of realism for the purpose of attributing it to him.

Abbot calls his realism 'relationism'. It "carefully shuns the great error of scholastic realism, i.e. the hypostatization of universals as substances, entities, or things; it teaches that genera and species exist objectively, but only as relations, and that things and relations constitute two great, distinct orders of objective reality, inseparable in existence, yet distinguishable in thought."[28] He points out, as did Peirce in 1877, that the scientific method presupposes the existence of an objective order; but he emphasizes clearly that the supposition of real or independently existing things entails the view that there exist real relations among these things; that the conception of distinct things as not standing in relation to one another is senseless, or that the logical consequence of such a supposition is solipsism. He holds that the objective reality of relations explains the character of knowledge; for "all knowledge consists in the seizure of the relations of things."[29] And the propositions of science are formulations of these relations.[30] Abbot's account of "objective reality" has much in common

[27] But cf. 1.560, where Scotus is said to "incline too much toward nominalism." (Cf. also *N. Amer. Rev.*, 1871. Vol. 113).

[28] *Scientific Theism* (1885), p. 28.

[29] *Ibid.*, p. 42.

[30] Cf. *ibid.* pp. 59–65.

with Peirce's: "The known objectivity of a relation is simply the known objective truth of the proposition which states it. But the relation itself was objectively real before the proposition which stated it was conceived; it determined the proposition, not the proposition it."[31] It is a great temptation to quote at length from this book of Abbot, whom Peirce called "one of the strongest thinkers I ever encountered";[32] and it is a nice question just how much Peirce was influenced by both the writings and conversation of his old friend of the Metaphysical Club.

It is precisely because of the fact that names – and positive knowledge consists of assertions or tacit assertions in which names occur – are on Peirce's view names not of atomic, independent things or properties but of properties-in-*relation*, that knowledge is fallible, for we can never attain a perfectly complete account of all of a thing's relations; and the view that names are names of properties-in-relation is nothing less than a highly condensed way of stating the pragmatic criterion of their meaning. "Generality," says Peirce in a manner reminiscent of Abbot, "is ... an indispensable ingredient of reality; for mere individual existence or actuality without any regularity whatever is a nullity" (5.431).[33] If we accept the realism just outlined as essentially the view of Peirce, we can appreciate the force of his belief that it is an important feature distinguishing pragmatism from positivism. The sensationalistic atomism which he had in mind presupposes a world of things analyzed (and known) in terms of individual sense-impressions. Mach and Pearson explain the alleged 'relations among things' – the most important of which are the so-called natural laws – as fictions created by science to organize these sense-impressions. And not merely the system of physical science but all mental processes in any degree abstract, are not a reflection of real relations but a mental device subserving an account of the succession of sense-impressions. It is therefore not the abstract or predicative or judicative element of thought that makes it genuinely cognitive but the element of immediate feeling. This view of the judicative element of thought as fictive in character Peirce attributes to the influence of the "prescientific sensationalists," those who, like Hobbes and Locke, held that generalizations and abstraction were matters of convenience. "Mach pushes this idea so far as to see no value in science except as an economy. 'The end of science', he says, is to *save* experiences by the reproduction and anticipation of facts in thought'. He does not make it quite clear why he should wish to

[31] *Ibid.* p. 63.

[32] Letter to James, 1904 (in Perry, *op. cit.*, II, p. 431).

[33] In 1871 Peirce says: "General conceptions enter into all judgments, and therefore into true opinions. Consequently a thing in the general is as real as in the concrete" (*N. Amer. Rev.*, Vol. 113. p. 457.

save experiences, unless they are disagreeable, nor how he can save experiences except by slumbering."[34]

Peirce, then, believes in the objective reality of law. Scientific formulae do not create these laws but attempt to represent them, and by so doing to predict what will be confirmed or discredited by experiment. And not only scientific formulae but knowledge in general reflects real relations and is not merely a device superimposed upon the phenomenally given. In Peirce's review of Pearson's *Grammar of Science* there is a little burlesque of positivist nominalism which, since it reveals clearly the tenor of his criticism, is worth quoting in full:

> "An ignorant sailor on a desert island lights in some way upon the idea of the parallelogram of forces, and sets to work making experiments to see whether the actions of bodies conform to that formula. He finds that they do so, as nearly as he can observe, in many trials invariably. He wonders why inanimate things should thus conform to a widely general intellectual formula. Just then, a disciple of Professor Pearson lands on the island and the sailor asks him what he thinks about it. 'It is very simple', says the disciple, 'you see you made the formula and then you projected it into the phenomena'. *Sailor*: What are the phenomenal? *Pearsonist*: The motions of the stones you experimented with. *Sailor*: But I could not tell until afterwards whether the stones had acted according to the rule or not. *Personist*: That makes no difference. You made the rule by looking at some stones, and all stones are alike. *Sailor*: But those I used were very unlike, and I want to know what made them all move exactly according to one rule. *Pearsonist*: Well, maybe your mind is not in time, and so you made all the things behave the same way at all times. Mind, I don't say it is so; but it may be. *Sailor*: Is that all you know about it? Why not say the stones are made to move as they do by something *like* my mind?
>
> When the disciple gets home, he consults Dr. Pearson. 'Why', says Dr. Pearson, 'you must not deny that the facts are really concatenated; only there is no rationality about that'. 'Dear me', says the disciple, 'then there really is a concatenation that makes all the component accelerations of all the bodies scattered through space conform to the formula that Newton, or Lami, or Varignon invented?' 'Well, the formula is the device

[34] Review of Mach, loc. cit. p. 252. Peirce is elsewhere more sympathetic yet not sufficiently liberal in interpretation. He says (5.601), "Mach has done the most to show the importance in logic of the consideration of Economy." But he holds that "Mach goes altogether too far. For he allows thought no other value than that of economizing experiences. This cannot for an instant be admitted. Sensation, to my way of thinking, has no value whatever except as a vehicle of thought."

> of one of those men, and it conforms to the facts'. 'To the facts its inventor knew, and also to those he only predicted?' 'As for prediction, it is unscientific business'. 'Still the prediction and the facts predicted agree'. 'Yes'. 'Then', says the disciple, 'it appears to me that there really is in nature something extremely like action in conformity with a highly general intellectual principle'. 'Perhaps so', I suppose Dr. Pearson would say, 'but nothing in the least like rationality'. 'Oh', says the disciple, 'I thought rationality was conformity to a widely general intellectual principle'."[35]

Let us remember that according to the pragmatic criterion of meaning any judgment of fact is an implicit prediction, a reference to the future. Now "... a prediction is essentially of a general nature, and cannot ever be completely fulfilled. To say that a prediction has a decided tendency to be fulfilled, is to say that future events are in a measure really governed by a law.... If the prediction has a tendency to be fulfilled, it must be that future events have a tendency to conform to a general rule" (1.26). In a universe devoid of law knowledge would be impossible; the very meaning of the thought-signs which constitute it is such that they involve prediction.

On Hypotheses. Peirce declares, in his "Lectures on Pragmatism" of 1903, that pragmatism "the logic of abduction." It is a rule "as to the admissibility of hypotheses to rank as hypotheses" (5.196). Now we have employed, up to this point, a definite sense of 'hypothesis', according to which the word characterized any synthetic statement whatever, a synthetic statement being a hypothesis in the sense that it is not intuitive, i.e. in the sense that it is theoretically capable of further confirmation. But we must now examine in more thorough fashion Peirce's use of 'hypothesis', because on the matter of 'scientific hypotheses' pragmatism differs from positivism. Let us consider (1) What the positivist view which Peirce sets over against his own is; (2) What Peirce's fundamental views on 'hypothesis' are; (3) What the pragmatist view which Peirce opposes to positivism is.

(1) The view which we find Peirce opposing to his own holds, on account of, or as expressive of, its underlying nominalism, that the propositions of science should properly describe sense-impressions, and hence that no proposition is admissible in science which is not at least capable of being conclusively verified by direct perception. Positivists of course differ; we ought not, if we were exact, to speak of Comte and Mach as positivists in the same sense. We have agreed not to enter into such discrimination so long as we succeed in clarifying Peirce's own view. Nevertheless it may not be irrelevant to point

[35] *Loc. cit.*, p. 305.

out that with respect to Comte in particular – in Peirce's brief references to positivism he is given comparatively the most attention – Peirce's interpretation may not be so questionable as it appears. Chauncey Wright, as early as 1865, did take it for granted, it is true, that the positivists accepted hypotheses that were 'indirectly' verifiable: "... the value of these theories can only be tested, say the positivists, by an appeal to sensible experience, by deductions from them of consequences which we can confirm by the undoubted testimony of the senses."[36] If Comte admitted "indirect" confirmation, at least the consequences of a hypothesis would have to be directly, and conclusively, confirmed. But that he did admit it is doubtful. He accepts the distinction, much older than his positivism, between 'hypotheses' and empirical laws; and it would seem that his radicalism consisted in stressing not merely verification but verification by direct observation. Empirical laws presumably *are* verified by direct perception; hypotheses, to be admissible, must be *capable* of such verification. Regardless of their actual differences, all positivists seem to agree upon Newton as the main source of the distinction between 'hypothesis' and 'empirical law'; in particular his assertion at the end of the *Principia*, "I frame no hypotheses." Newton meant by 'hypothesis' a proposition arrived at in a definite way. The laws proper to 'experimental philosophy' he believed should be framed by 'induction' from 'particular propositions' 'inferred from the phenomena'. By 'hypothesis' he accordingly meant a proposition not arrived at in this way: "Whatever is not deduced from the phenomena is to be called an hypothesis." The law of gravitation is "deduced from the phenomena," but a proposition about the "causes of those properties of gravity" which Newton declares he had been unable to deduce from phenomena would be a hypothesis.[37] Newton thus apparently meant by "hypothesis" not merely a proposition inferred in a certain way, but also (consequently) one asserting something about properties not directly observable.

(2) In Peirce there are to be found two fundamentally different views of the meaning of 'hypothesis'. When I say 'fundamentally different' I do not mean

[36] "The Philosophy of Herbert Spencer," *N. Amer. Rev.* 1865 (Rep. in Philosophical Discussions, ed. C. E. Norton, p. 47).

[37] The entire relevant passage is: "Hitherto I have not been able to discover the causes of those properties of gravity from phenomena, and I frame no hypotheses; for whatever is not deduced from the phenomena is to be called an hypothesis; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy particular propositions are inferred from the phenomena, and afterwards rendered general by induction. Thus it was that the impenetrability, the mobility, and the impulsive force of bodies, and the laws of motion and of gravitation, were discovered. And to us it is enough that gravity does really exist, and act according to the laws which we have explained, and abundantly serves to account for all the motions of the celestial bodies and of our sea." (*Principia*, penultimate paragraph).

'wholly inconsistent', for they are not. What I mean will be clear if we consider the two views as concerning not the meaning of 'hypothesis' alone but the relation between abduction and induction. An examination of Peirce's writings will reveal that the two views, which we may call (*a*) and (*b*), are respectively earlier and later, the first prevailing almost up to 1900, the second after 1900. It should be strongly emphasized at the outset that common to both views is the conception of a hypothesis as the conclusion of an inference, namely, abduction. This type of inference is always conceived by Peirce in the same way, as of a form in which the conclusion is obtained by "affirming the consequent" (cf. 5.189, p. 46 above; 6.472, 2.623, 2.706, 2.712; p. 50 above[38]). The points on which the two views differ are, first, the nature of the conclusion of an abduction, i.e. the nature of 'hypothesis'; second, the relation between abduction and induction, which involves views on the purpose and function of each.

(*a*) On this view, abduction and induction are two kinds of inference, each of which is independent of the other. By induction we discover (conclude) 'laws', by abduction we discover 'causes' (i.e. conclude 'hypotheses'). Peirce recognized that he was following Newton's usage, if not his views (2.707). In induction "we conclude that facts, similar to observed facts, are true in cases not examined"; in abduction "we conclude the existence of a fact quite different from anything observed" (2.636). Induction is thus "reasoning from particulars to the general law; [abduction] from effect to cause. The former classifies, the latter explains" (*ib.*). This conception of a hypothesis as a statement "quite different" from an observed fact from which it is adduced (and which, with other observed facts, it is able to predict) is quite broad, and, to judge from Peirce's examples, comprises three sub-classes of statements.

(i) A hypothesis may, in the first place, be a statement of a fact not observed when the abduction is made but which is nevertheless capable of subsequent direct observation. For example, if I see some white beans, and I happen to know that if these beans come from a given bag then they must be white, I may conclude that the beans I saw do come from this bag (cf. 2.623). This hypothesis, like any other, would 'explain' the whiteness of the observed beans, would state the 'cause' of the beans being white. It is itself, however, capable of direct observation. (ii) A hypothesis may be not capable of direct observation because it refers to the past (cf. 2.642); as for instance when we abduce the hypothesis that the sea once covered the land in order to explain piscivorous fossils observed, or when we abduce the hypothesis of the existence of Napoleon, in order to explain the presence of documents (2.625); and

[38] See also *Century Dictionary*, "Hypothesis," usage no. 4.

> these hypotheses may, more properly than those of the first class (as Peirce apparently failed to see), be called statements of 'causes'. (iii) Finally, a hypothesis may be a 'scientific' hypothesis, a 'theory' (excluding historical theories, which belong to the second class), in which case it would be a statement about what has never been observed, e.g. atoms, luminiferous ether, etc. (cf. 5.589).

Such statements would be most properly called statements of 'causes'. On the present view, they 'explain' empirical laws or formulae, which are the result of induction or generalization from facts directly observable. These three classes of hypotheses, then, are all statements of facts 'quite different' from the observed facts from which they are abduced.[39] They all infer "from facts of one kind to facts of another," while induction "infers from one set of facts another set of similar facts" (2.642). The conclusions of inductions, as opposed to these conclusions of abductions, are 'generalizations'. In induction "we find a certain thing to be true of a certain proportion of cases and infer that it is true of the same proportion of the whole class"; in abduction we observe some fact or circumstance "which would be explained by the supposition that it was a case of certain general rule, and therefore adopt that supposition" (2.624). The present view will be most clearly seen to differ from (*b*) if we consider the following passage, which appears in "A Theory of Probable Inference" of 1883 and is used almost verbatim by Peirce as part of his definition of 'Hypothesis' for the *Century Dictionary* in 1889:

> "The conclusions of Hypothetic Inference *cannot be arrived at inductively*, because their truth is not susceptible of direct observation in single cases. *Nor can* the conclusions of Inductions, on account of their generality, *be reached by hypothetic inference*. For instance, any historical fact, as that Napoleon Bonaparte once lived, is a hypothesis; we believe the fact, because its effects – I mean current tradition, the histories, the monuments, etc. – are observed. But no mere generalization of observed facts could ever teach us that Napoleon lived. So we inductively infer that every particle of matter gravitates toward every other. Hypothesis might lead to this result for any given pair of particles, but it never could show that the law was universal (2.7 14, my ital; Cf. *Cent. Dict.*)."

(*b*) On Peirce's later view, which we take to be definitive and have already assumed throughout Part I, abduction and induction are different types of inference, but they are not independent, and the conclusion of any induction is identical with that of some abduction, that is, it is some hypothesis. *Any*

[39] The perceptual judgment as hypothesis would be the most extreme case of the first of these classes.

synthetic proposition, in so far as it is for the first time entertained as possibly true, must be the result of an abduction. Whether the proposition be a statement about non-observable entities or a generalization (so-called) or a perceptual judgment, it is a hypothesis arrived at by abduction. Peirce calls abduction the "First Stage of Inquiry" (6.472). On this view, however, not only is every synthetic proposition a hypothesis in so far as it is first suggested to the mind as true, but every proposition remains a "hypothesis" in so far as it is synthetic. What is induction? "Induction is the experimental testing of a theory.... It sets out with a theory and it measures the degree of concordance of that theory with fact" (5.145); "Induction consists in starting from a theory, deducing from it predictions of phenomena, and observing those phenomena in order to see *how nearly* they agree with the theory" (5.170); induction "consists in testing a hypothesis *already recommended* by the retroductive procedure..." (2.755; my ital.); "Induction takes place when the reasoner already holds a theory..." (2.775). But perhaps the clearest statement is: "Induction is an Argument which sets out from a hypothesis, resulting from a previous Abduction and from virtual predictions, drawn by Deduction, of the results of possible experiments, concludes that the hypothesis is true in the measure in which those predictions are verified..." (2.96; cf. 6.472, 5.590–1). The conclusion of an induction consists in "extending a certain confidence to the hypothesis" (6.526; cf. 6.527, 2.777). The conclusion of an induction, then, is always some hypothesis previously abduced. An induction concludes a hypothesis by 'generalization' from the confirmed consequences of that hypothesis; and the more numerous, diverse and random these confirmed consequences are, the stronger the induction and consequently the sounder the confirmation of the hypothesis. And the reason why every synthetic proposition remains a hypothesis is that it is always further confirmable by induction. I want to quote further in support of the point that any statement may be concluded by an abduction.

> "All our knowledge may be said to rest upon *observed facts* (6.522; P's ital.) ... Knowledge must involve additions to the facts observed (6.523) ... *Any* proposition added to observed facts, tending to make them applicable *in any way* to other circumstances than those under which they were observed, may be called a hypothesis (6.524; my ital.) ... By a hypothesis, I mean, not merely a supposition about an observed object, as when I suppose that a man is a Catholic priest because that would explain his dress, but also *any other* supposed truth from which would result such facts as have been observed, as when van't Hoff, having remarked that the osmotic pressure of one per cent. solutions of a number of chemical substances was inversely proportional to their atomic weights, thought that perhaps the same relation would be found to exist between the same properties of any other chemical substance" (6.525; my ital.).

On view (*a*) this last example of an abduction would have been called 'generalization' which could only be the result of induction, abduction being unable to conclude anything of such generality (cf. 2.714, quoted above). On the present view any such generalization is *suggested* by abduction, and only *confirmed* by induction. Clearly, contrary to (*a*), a generalization, no less than any other proposition conjectured (abduced), goes beyond actually observed facts; On the present view abduction alone can introduce anything new in knowledge (e.g. 5.171,5.145, 2.777); induction "never can originate any idea whatever" (5.145), for it simply confirms what has already been tentatively contributed to knowledge.[40]

In opposing views (*a*) and (*b*), I do not wish to suggest that Peirce held one view until 1900 and suddenly abandoned it after that date; for the roots of the later view go further back, and it is only the case that they become explicit after 1900. In 1893 the view that induction properly occurs only after a previous abduction was virtually expressed when Peirce said, reflecting the "views of Whewell," that "progress in science depends upon the observation of the right facts by minds *furnished with appropriate ideas*" (6.604).

(3) We are flow better able to understand the difference between the views of Peirce and the positivists who, meaning primarily by 'hypothesis' something opposed to an empirical formula, make it secondary or instrumental to the latter, and even then impose a radical condition on its admissibility. Peirce's opposition of hypotheses and empirical formulae on his earlier view was not this kind of opposition. It was concerned primarily with different types of inference; and whereas for the positivists "hypotheses" were statements about assumed entities (subdivided into admissibly and fictitiously assumed entities), for Peirce a statement about assumed entities was only one kind of hypothesis. A fortiori, his later view is even further from that of the positivists, understanding by a 'hypothesis' any synthetic statement whatsoever. He specifically rejects the way in which 'hypothesis' is 'ordinarily used' (under positivist influence), as that "which carries with it a suggestion of uncertainty, and of something to be superseded"; this sense "does not belong at all to my use of it" (2.707). Hypotheses are indeed "provisional" or "probational" (e.g. 1.68, 2.96), but in the sense that they are not perfectly certain, not in the positivist sense of something resorted to for lack of anything better, and instrumental in any event to what is purely descriptive (see 5.276n. usage 8; *Cent. Dict.* usage 5; 2.642).

The reason why Peirce can safely ignore various distinctions among the kinds of hypotheses and remain free from error or superficiality is that the

[40] Peirce sometimes takes the view that confirmation also is an "ampliation of our positive knowledge" (2.96). This of course is not incompatible with the sense in which abduction alone increases knowledge. Ordinarily, both abduction and induction are called "ampliative" inferences; and this term may be retained in the sense that both are distinguished from explicative or analytic inference (cf. 2.623).

ultimate test of any statement's admissibility is for him the pragmatic criterion. The class of hypotheses is identical with that of synthetic statements, and a hypothesis is admissible if it is meaningful. His full support of hypotheses which posit unobserved properties or entities[41] is based on his examination of the actual procedure of science and his long experience as professional physicist. In his review of the first volume of James's *Principles of Psychology* he takes issue with the dictum in James's Preface that "all attempts to *explain* [the] phenomenally given ... as products of deeper-lying entities ... are metaphysical." James had also said that "in this strictly positivistic point of view consists the only feature for which I feel tempted to claim originality." Pointing out that the application of the epithet 'metaphysical' is too easy a way of eliminating from science a procedure for which one happens to have a distaste, and that the above dictum cannot by itself suffice for such an elimination, Peirce says: "Nor is it in the least true that physicists confine themselves to such a 'strictly positivistic point of view'. Students of heat are not deterred by the impossibility of directly observing molecules from considering and accepting the kinetical theory; students of light do not brand speculations on the luminiferous ether as metaphysical.... All these are 'attempts to explain phenomenally given elements as products of deeper-lying entities'. In fact, this phrase describes, as well as loose language can, the general character of scientific hypotheses."[42] The important consideration is that hypotheses of this kind do have observable consequences and may be confirmed by the confirmation of a great many of these. *Any* statement is meaningful if it is capable of confirmation, and any statement is acceptable as established in science if it is actually confirmed. In a review of a translation of Spinoza's *Ethics*, Peirce calls attention to the fact that the procedure of Galileo, who appealed to both common sense and *il lume natural* (cf. 1.80, 6.10) and of Spinoza, are of precisely the same kind. "But what he and all his school fail to remark is that the conclusions of the students of mechanics are sure to be brought to the test of experiment in various ways. It is just that quiet verification that makes all the difference in the world. A hypothesis of any kind has no positive support until it has predicted something capable of being observed and that prediction verified" (my ital.).[43] Probably the protest that Peirce would on other occasions have made against the exclusion of

[41] Peirce makes no distinction between unobserved and unobservable, or between a hypothesis in science "adopted as a probable representation of a state of things which may really exist though imperceptible to the senses" and one adopted "merely as a convenient means of expressing the laws of phenomena" (Rankine, *Miscellaneous Scientific Papers*, p. 210).

[42] *Nation*, Vol. 53 (1891), p. 15.

[43] *Nation*, Vol. 59 (1894), p. 345.

hypotheses positing assumed entities is that it blocks the way of inquiry. To make strictures on such hypotheses is to discourage conjectural explanations whose immediate justification is not evident. Not only does it contradict the historical achievements of classical science, but it violates the freedom which lies at the basis of scientific method. All hypotheses are essentially the same in that all are adopted to explain, or in general 'add to' (6.523–4), what is observed; and even the hypotheses concerning assumed entities are in principle no different from hypotheses about the past (cf. 5.597, 2.511n.; p. 163 above). Especially can this be seen in historical philology, in, for example, the translation of the cuneiform inscriptions (5.589), where conjectures were multiplied one on another, until mutual confirmation of the readings, together with confirmation from accepted history and the facts of linguistics, established the theory.

Perhaps the statement we originally considered, that pragmatism is the 'logic of abduction', will now be clearer. For after all, abduction must on the whole "cover all the operations by which theories and conceptions are engendered" (5.590).

The Element of Conventionalism in Peirce. Peirce's satire of Mach's view that science is a device of "saving experiences by the reproduction and anticipation of facts in thought" is unduly attentive to the letter and hardly to the spirit, which differs not very greatly from that of Peirce himself. For he regards the purpose of a scientific hypothesis as being "to lead to the avoidance of all surprise and to the establishment of a habit of positive expectation that shall not be disappointed" (5.197). But granted the differences we have mentioned, we may ask whether it follows from Peirce's realistic interpretation of hypotheses that he excludes altogether the element of convention stressed by the positivists. Although his writings on this subject are scanty, it is possible to distinguish three forms in which conventionalism enters his views; first, with respect to the choice of hypotheses in science; second, with respect to the language of science; third, with respect to the results of science, i.e. with respect to the concepts of truth and reality. These divisions are closely related, and might in fact be regarded as the same set of opinions looked at from three different points of view. But if so, then at least it will be plain that the conventionalism regarded from the third point of view is much more prominent than that regarded from the first.

(1) According to Peirce there is an 'arbitrary element' in scientific theories; but as these theories progress, they "become more and more purified from the dross of subjectivity" (5.589). Just what this statement implies is not clear, for he does not expatiate. Very likely he has no more in mind than that the arbitrary element arises from the possibility of employing different hypotheses to explain the same set of facts, or fundamentally different interpretations – e.g. mechanical or non-mechanical – for a given branch of science, or more

pervasive formulae in place of narrower ones. Peirce undoubtedly realized that, especially in the case of hypotheses concerning assumed entities, the replacement of one by another is not to be regarded simply as an advance toward 'objective truth' (5.589) but also as a change in formulation or expression for some reason of expedience. He would, however, hold that such a change ultimately constitutes a link in the progress toward 'objective truth' (as he defines it – cf. (3) below); that one of the two differently formulated hypotheses could ultimately be shown to be the 'truer'. Now the only point, discussed in a number of places by Peirce, that possibly bears on the matter of conventional choice among hypotheses, is the question of 'simplicity'. Peirce accepts Ockham's razor, which be states: "Before you try a complicated hypothesis, you should make quite sure that no simplification of it will explain the facts equally well" (5.60); or as follows: "Try the theory of fewest elements first; and only complicate it as such complication proves indispensable for the ascertainment of truth" (4.35).[44] Peirce regards this principle as basic to scientific procedure and not nominalistic (4.1). His acceptance of it raises two questions: (*a*) What does he mean by one hypothesis being "simpler" than another? (*b*) In what sense is the simple hypothesis preferable to the complicated one, i.e. what are the implications of the principle?

(*a*) One of the statements of the principle implies that the 'simpler' hypothesis is the one containing the 'fewest elements', or better, fewest concepts. But what kind of concepts? We must make some distinction here. For Peirce says that by the 'simpler' hypothesis he does not mean the 'logically simpler', which he defines as the "one that adds the least to what is observed," but rather "the one that instinct suggests" (6.477). By saying then that the simpler hypothesis is the one containing the 'fewest elements' he does not mean the one asserting something about the fewest unobservable entities. A simple hypothesis is rather one "composed of a few conceptions natural to our minds" (6.10). So that in the first place, simple hypotheses contain numerically fewer concepts; and secondly, of two hypotheses with the same number of concepts, the simpler is not that with the least number of unobserved or unobservable 'elements' but that with the greatest number of 'instinctive' or 'natural' or 'familiar' (2.740) elements. The criterion of fewer unobservable entities is the positivist and nominalist criterion, going back to Ockham himself. Peirce's own sense of 'simple' he takes to be that of Galileo.

> "That truly inspired prophet had said that, of two hypotheses, the *simpler* is to be preferred; but I was formerly one of those who, in our dull self-conceit fancying ourselves more sly than he, twisted the maxim to mean

[44] Other statements: "A hypothesis should be stripped of every feature which is in no wise called for to furnish an explanation of observed facts" (5.26); "A hypothesis ought not to introduce complications not requisite to explain the facts" (4.1). (Cf. 6.24, 6.535).

> the *logically* simpler, the one that adds the least to what has been observed, in spite of three obvious objections: first, that so there was no support for any hypothesis; secondly, that by the same token we ought to content ourselves with simply formulating the special observations actually made; and thirdly, that every advance of science ... discloses a world of unexpected complications. It was not until long experience forced me to realize that subsequent discoveries were every time showing I had been wrong, while those who understood the maxim as Galileo had done, early unlocked the secret, that the scales fell from my eyes and my mind awoke to the broad and flaming daylight that it is the simpler Hypothesis in the sense of the more facile and natural, the one that instinct suggests, that must be preferred; for the reason that, unless man has a natural bent in accordance with nature's, he has no chance of understanding nature at all" (6.477).

(*b*) Peirce's acceptance of the principle that the simpler hypothesis is the preferable one does not imply his acceptance of the view that a simple hypothesis is in every case the best. He holds that in general there is no guarantee of the simpler being the 'truer' hypothesis and that the evidence is often to the contrary. Nevertheless he believes that the more familiar hypothesis should be 'tried first' (cf. 4.1, 5.598, 6.532). The reason appears to be twofold: First, hypotheses that are simpler in this sense are more readily eliminable, and the necessity of quick elimination is vital in scientific economy, since science is confronted with a tremendous number of possible choices.[45] Secondly, it is Peirce's view that science could not hitherto have been so successful unless there were a kind of affinity between man as a biological animal and the world he attempts to explain (cf. 5.604). For the overwhelming number of possible hypotheses could not have been manipulated if appropriate conjectures could not have been made on the basis of instinctive knowledge.[46] While it may not, on Peirce's view, be the case that the simpler

[45] Cf. also: "Good scientific economy will usually prescribe that simple hypotheses shall be thoroughly tested before resorting to complicated ones. This is the truth in Ockham's razor. But it is very far from being true, in any question concerning any science of life – psychology, physiology, and the like – that the true hypothesis is likely to be simple. On the contrary, the history of discovery in these departments shows many more examples of the old theory being found to be too simple than of its being found to be too complex" (*Nation*, Vol. 73, 1901, p. 267).

[46] "Our minds having been formed under the influence of phenomena governed by the laws of mechanics, certain conceptions entering into those laws become implanted in our minds, so that we readily guess at what the laws are. Without such a natural prompting, having to search blindfold for a law which would suit the phenomena, our chance of finding it would be as one to infinity" (6.10).

or instinctive hypothesis is the correct one, it is the best to start out with for the reason that if our ultimate result is a complicated hypothesis, it is probably a complication of the simple one originally tried. So that "instinctive beliefs," even if they do not furnish the central idea, at least furnish the main direction.[47]

Peirce's belief that Ockham's razor, in the foregoing sense, is not nominalistic, thus appears to indicate that he regarded the difference between simple and complicated hypotheses not in terms of the more and the less convenient but in terms of greater and lesser approximation to 'objective truth'. He apparently did not consider very seriously the view that in any given case a 'complicated' hypothesis may be regarded as no less true than a 'simple' one, or vice versa. The ultimate consideration for him was in terms of truth: Try the 'simple' hypothesis first, both as good economy and as an approximation toward the truth, but ultimately choose the 'truer' one in any event (Cf. 4.1, 4.35, 5.26).

(2) Peirce recognized, as a result of the pragmatic criterion, that certain problems of traditional philosophy were verbal problems, soluble by more precise formulation. If the opposing answers to a problem do not differ in the observational properties consequent upon the truth of each, they are either both meaningless or both assert the same thing. However, not only in traditional metaphysics but in physics do pseudo-problems arise. For instance, it is a pseudo-problem to ask whether force *is* an acceleration or whether it *causes* acceleration (5.404). The adoption of one or the other 'view' is a convention of language, not a matter to be decided empirically. For the application of the pragmatic criterion shows the meaning of the two expressions to be identical. Similarly in the case of such questions as whether a diamond could be said to be 'hard' if it were not pressed, or whether a stone could be called 'brilliant' if it lay in darkness at the bottom of the sea. These "concern much more the arrangement of our language than the meaning of our ideas" (5.409). Peirce means that the proper question is not whether the diamond *is* hard when we are unable to press it (for this, by its very formulation, and by the pragmatic definition of the predicate, precludes our giving an answer, and is therefore, strictly speaking, meaningless), but whether we wish to *call* the diamond hard under such conditions. We may or may not do so, with impunity.[48]

[47] Cf. 1.634: "We are driven oftentimes in science to try the suggestions of instinct; but we only *try* them, we compare them with experience, we hold ourselves ready to throw them overboard at a moment's notice from experience." (Cf. also 1.404).

[48] Peirce later (5.453, 457) calls attention to the fact that he expressed himself badly in the diamond illustration of 1878. He had implied by his words that the diamond could be called, indifferently, hard or not hard, when not *actually* pressed. This he points out, was

(3) Concerning the results of science, the 'established truths', Peirce's conventionalism is much more outstanding. What is to be regarded as an established truth in science depends upon the degree of confirmation determined by the scientific community. Since no scientific result is ever conclusive, the concept of confirmation is a relative one, and is determined conventionally – yet not arbitrarily. For Peirce a statement is true if it is accepted by the community which practices the scientific method for the purpose of attaining its belief; and the real is that which is represented in true statements. If a true statement is one confirmed to a certain degree, and if what constitutes confirmation is determined ultimately by agreement then, strictly, "truth" is determined ultimately by agreement. This is not in the least strange or awkward. For this agreement is not arbitrary agreement. It is determined by profound considerations, truth being belief *compelled* by scientific inquiry.

The notion of truth depends both upon the actual practice of science and on a goal which it seeks to attain. The notion of a perfectly true opinion has no meaning apart from the notion of opinions which correct themselves; and conversely we cannot speak of opinions as approximately true unless we conceive of some limit to which they approximate. In spite of this interdependence, it is well to point out that it is the approximately true which represents what is ordinarily understood by "true," and justifiably so. The 'true' is the 'confirmed'. The perfectly true would be that which theoretically required no alteration, or that which, no matter how far investigation were carried, would be uninfluenced in its status. It is no more than a limit or standard for increase of perfection; if it alone is regarded as synonymous with 'true', and existing opinion branded as therefore representative only of 'appearance' and not 'reality', inquiry is stifled in favor of an anti-pragmatic metaphysics. Peirce teaches that truth in general is relative to investigation; that the purpose of investigation is to destroy doubt and establish belief; and that science, being the best method of achieving this purpose, is the instrument of truth.

The sense in which truth is conventional is analogous to the sense in which 'reality' is conventional. "Reality is only the object of the final opinion to which sufficient investigation would lead" (2.693). Peirce speaks of his "social theory of reality" (6.610), according to which reality "involves the notion of a community" (5.311). "The real is the idea in which the community ultimately settles down" (6.610) ; "reality consists in the agreement that the whole community would eventually come to" (5.331). Corresponding to the two aspects of truth, is the distinction between the real as the object known

contrary to his basic realism, which must hold that the diamond is *really* hard even when not actually pressed. What he had meant was that the diamond might indifferently be called hard or not hard if it *could* not be pressed. For "we must dismiss the idea that the occult state of things ... which constitutes the reality of a diamond's hardness can possibly consist in anything but in the truth of a general conditional proposition" (5.457).

in the final opinion and the real as that known in statements ordinarily called 'true'. And although the former appears to be emphasized in the statements just quoted, the latter is in fact what is emphasized by the spirit of Peirce's thought. We do know 'reality' (cf. 5.384) though of course not with perfect precision and completeness. Reality in the perfect sense is "something which is constituted by an event indefinitely future" (5.331).

Now it is a statement recurrent time and again in Peirce that "that is *real* which has such and such characters, whether anybody thinks it to have those characters or not" (5.430); and in fact, "we may define the real as that whose characters are independent of what anybody may think them to be" (5.405). How does this – which Peirce calls the "abstract definition"[49] of reality – square with the other statements we emphasized, according to which the real is that which is represented in an opinion? Are these two views contradictory? Clearly not, once we elucidate the sense of the latter definition, which is in fact the pragmatic definition. It does not imply that reality is created by thought, that it comes into being because we happen to have opinions. It states that what reality is (i.e. what its character is), is given in a true opinion. But it goes further. It implies that if by reality as something in dependent of thought is meant something which cannot be known by thought, then the word is meaningless. For let us apply the pragmatic criterion. We then find that 'real 'can mean nothing unless definable in terms of sensible operations; and no statement which is said to be about reality or some phase of it is a meaningful statement unless it is capable of confirmation. Reality, then, is that which can only be represented in confirmable statements. It would be senseless to say that a statement which could not possibly be verified 'describes' reality. But the opinions which we adopt as our truths or true beliefs are simply those which have been to a reasonable degree confirmed; and this is why the real can only be that which is represented in such opinions, though doubtless "reality" in the perfect and complete sense would be that which is represented by the perfectly true opinion. If reality were held to be other than what is described by true opinions, that would be the same as saying that it was unknowable; and we cannot, by the pragmatic criterion, speak meaningfully of what is unknowable (cf. 5.310). Thus to speak of the 'nature of reality' is to speak of that about which we ultimately agree, of that described in our true opinions; and of anything else we cannot significantly speak. This is what is meant by a statement like the following: "The reality of that which is real does depend on the real fact that investigation is destined to lead, at last, if continued long enough, to a belief in it" (5.408).

Truth, we said, is for Peirce the opinion on which the community agrees, not arbitrarily but as "the irresistible effect of inquiry" (5.494); it is the

[49] I.e. its 'verbal' or nominal definition (cf. 5.525).

opinion which is "ultimately agreed to by all who investigate." But we must guard against misunderstanding. Peirce does not mean that on any given question the community will *in fact* always arrive at the truth (i.e. be compelled to agreement by inquiry) (6.610, 5.565). Certain questions have been settled, at least for the time being, and science therefore possesses a body of 'established truths'; but there is no guarantee that a given question will actually be settled. Peirce's point is that it is unwarranted "to suppose that, with regard to any given question (which has any clear meaning), investigation would not bring forth a solution of it, if it were carried far enough" (5.409). In other words, if a question is a meaningful question it is an answerable question, it is decidable: the truth or falsity of the answers to it must be capable of positive investigation. But to say that a question is answerable and that it will in fact be answered are clearly different. (With respect to certain questions there is *no* truth at all; i.e. the question may be meaningless). Any assertion that a given question's truth will in fact be eventually decided, can be no more than a 'hope', based, perhaps with good reason, on the history of science (cf. 6.610, 5.407, 5.565, 2.654).

CHARLES S. PEIRCE, PIONEER OF MODERN EMPIRICISM

Ernest Nagel. "Charles S. Peirce, Pioneer of Modern Empiricism." *Philosophy of Science* 7.1 (January 1940): 69–80.

No account of the development of contemporary empiricism is adequate which neglects the writings and the influence of Charles Peirce.[1] Although he is not easily pigeon-holed and can not be claimed as the exclusive property of any school or movement, it is appropriate that the hundredth anniversary of his birth should be commemorated at this Congress. For the movement of which it is a manifestation is engaged in a cooperative, intensive cultivation of the methods of the sciences with the help of the most advanced tools of modern logic; and Peirce's intellectual career was also a single-minded devotion to that task. It is fitting, also, that his birth-year be celebrated at Harvard by an international congress. For although he was denied the privilege of teaching at this university, much of his influence was propagated by William James and Josiah Royce, two of its great teachers; and however much he may have suffered from neglect during his life-time, his work surely merits recognition from a movement not confined by national bounds. It is characteristic of the best established sciences that though individuals may pursue researches in them independently of one another, the conclusions reached tend to support each other and to converge toward a common stream of sound beliefs; and such convergence is indeed the sole identifiable warrant for the confidence that some measure of the truth has been attained. It is therefore a happy sign that so many of the central ideas of the present movement have been independently developed on both sides of the Atlantic. One is not minimizing the contributions of the Vienna Circle in pointing out that many of its recent views have been taken for granted for some time by American colleagues, largely because the latter have come to intellectual maturity under the influence of Peirce.

It may nonetheless impress some as a paradox to count Peirce among the formative influences upon participants of this Congress. If, as Professor Frank recently stated, Mach is one of the spiritual ancestors of the unity of

[1] Read at the Fifth International Congress for the Unity of Science, Harvard University, September 3–9, 1939.

science movement and "the real master of the Vienna Circle," the Peirce who tried to construct a metaphysical system in the grand manner, and to provide a framework adequate for the results of the special sciences for a long time to come, seems definitely out of place in this company. He carried on a life-long polemic against positivisms of the type of Comte and Pearson; and though he had a high regard for some of the work of Mach, he expressed in no uncertain terms his condemnation of what he regarded as Mach's sensationalistic, nominalistic empiricism.[2] He confessed that he owed much to Schelling, and his architectonic cosmogony is admittedly a species of absolute idealism. He was a diligent student of the history of philosophy, he was brought up on Kant and claimed that at one time he knew the first *Critique* by heart, and he had a profound admiration for the scholastics.

But although Peirce had an abiding passion for system-building, his most vigorous efforts did not go into speculative metaphysics; and in any case the influence of metaphysical writings has been practically nil – whether because only inadequate outlines of his grandiose system appeared during his life-time, or because other tendencies which Peirce initiated swamped the effects they may have had otherwise. Indeed, seldom have severer judgments upon the claims and methods of traditional metaphysics been made than those to be found in his writings. He regarded the intrusion of metaphysical speculation into science as a hindrance to free inquiry, and distrusted an enterprise which has failed to develop methods of cooperative research among its members. His sharp criticism of Mach, though in my opinion unjust and not free from misunderstanding, were directed against what he took to be an attempt to legislate on metaphysical grounds the objects of knowledge, the limits of science, and the possible forms of physical theory.[3] But however this may be, it would be a gross misrepresentation of Peirce's views to regard them as

[2] Cf. Peirce's review of Mach's *The Science of Mechanics*, in *The Nation*, Vol. 57, 1893.

[3] Thus he declared in the above review: "Sir Isaac Newton formulated the three laws of motion which stand to-day in all the text books. The first, due to Galileo, is that a body left to itself continues for ever to describe equal spaces in equal times on one straight line. The third, Newton's own achievement in great measure, the law of action and reaction, is that one body cannot be drawn back without other bodies on the same line being drawn forward to balance it. Now Newton, with his incomparable clearness of apprehension, saw that the third law implies that spatial displacement is not merely relative, and further that, this being granted, the first law implies that temporal duration is not merely relative. Hence Newton drew the conclusion that there were such realities as Time and Space, and that they were something more than words expressive of relations between bodies and events. This was a scientific conclusion, based upon sound probable reasoning from established facts. It was fortified by Foucoult's pendulum experiment, which showed that the earth has an absolute motion of rotation equal to its motion relative to the fixed stars. Moreover, Gauss and others were led to ask whether it be precisely true that the three angles of a triangle sum up to two right angles, and to say that observation alone can

minor variants of traditional philosophic doctrines. Peirce is the nearest thing to Leibniz this country has produced, and like the latter was able to combine a speculative bent of a high order of talent and ingenuity with a power of sober analysis and sense for concrete fact. His importance in the history of recent thought is due to his contributions to logic and mathematics, and to the stimulating effect of his first-hand knowledge of the theoretical and experimental sciences upon the study of scientific methods.

> "From the moment when I could think at all," he wrote in 1897, "until now, about forty years, I have been diligently and incessantly occupied with the study of methods of inquiry, both those which have been and are pursued and those which ought to be pursued. For ten years before this study began, I had been in training in the chemical laboratory. I was thoroughly grounded not only in all that was then known of physics and chemistry, but also in the way in which those who were successfully advancing knowledge proceeded. I have paid the most attention to the methods of the most exact sciences, have intimately communed with some of the greatest minds of our times in physical science, and have myself made positive contributions—none of them of any very great importance, perhaps—in mathematics, gravitation, optics, chemistry, astronomy, etc. I am saturated, through and through, with the spirit of the physical sciences."[4]

It is unnecessary on this occasion to speak of Peirce's contributions to formal logic (e.g., his improvements upon Boole's work, his development of the logical relations, etc.), for these have been recognized long ago; and it is a safe conjecture that his technical papers on these subjects are now primarily of historical interest. It is worth pointing out, nevertheless, that for Peirce formal logic was simply one division of the general theory of signs. An adequate logical theory, according to him, must take into account the complicated properties and functions of signs in inquiry, and even the rules of formal logic were regarded by him as intimately related to the habits of action generated in the course of successful inquiry. Thus, the alleged facts of "consciousness" were dismissed by him as totally irrelevant to the question of the validity of

decide this question.... But Mach will not let it go so. His metaphysics tells him that there is no such thing as absolute space and time, and consequently no such thing as absolute motion. The laws of motion must be revised in such a way that they shall *not* predict that result of Foucoult's experiment which they did successfully predict, and that non-Euclidean geometry must be put aside on metaphysical grounds. Is not this making fact bend to theory?" *Op. cit.* p. 252.

[4] Charles S. Peirce, Collected Papers, 1.3. All references, unless otherwise specified, are to volume and paragraph of this edition of Peirce's writings.

the laws of logic; for even if consciousness were annulled it would still remain true, he said, "that such and such a habit of determining one virtual store of knowledge by another will result in the concentration of action so as to bring about definite ends" – to which he added that rationality consists in the fact that the rational being will act so as to attain certain ends.[5] Accordingly, Peirce was one of the most pronounced foes of attempts to base logic upon inner feelings of certitude or other facts of individual psychology, and his conception of the nature and function of formal logic is incompatible with interpretations of inquiry in terms of a "mentalistic" theory of thinking.

Peirce's distinctive contributions to logic as the general theory of signs center around his pragmatism, his critical commonsensism, and his fallibilism. By far the best known is his pragmatic maxim, proposed as a method for clarifying ideas, eliminating specious problems, and unmasking mystification and obscurantism hiding under the cloak of apparent profundity.[6] In one form or another his proposal was adopted by a number of distinguished thinkers, for example, in this country by William James and John Dewey, so that to-day it is almost a common place. Peirce's own formulation of the pragmatic maxim leaves much to be desired in the way of explicitness and clarity; and more recent formulations, such as those by Professor Carnap and others, have the same general intent but superior precision. I nevertheless venture two general remarks on the Peircean version of pragmatism which, though obvious, merit attention.

The pragmatic maxim was intended as a guiding principle of analysis. It was offered to philosophers in order to bring to an end disputes which no observation of facts could settle because they involved terms with no definite meaning. It was directed at the Cartesian doctrine of clear and distinct ideas, which found the terminus of analysis in vague abstractions claimed to be grasped intuitively, as well as at the common tendency to convert types of behaviors into unknowable agencies controlling the flux of events. Above all, it pointed to the fact that the "meanings" of terms and statements relevant in inquiry consist in their being *used* in determinate and *overt* ways. Pragmatism, to employ Peircean language, was thus a proposal to understand general terms in terms of their concrete application, rather than vice-versa. "We should hardly find to-day a man of Kirchhoff's rank in science," he wrote in 1903, "saying that we know exactly what energy *does* but what energy *is* we do not know in the least. For the answer would be that energy

[5] 2.66.

[6] His earliest version of it runs as follows: "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object." 5.402.

being a term in a dynamical equation, if we know how to apply that equation, we know thereby what energy is...."[7] Now my first point is that the pragmatic maxim should be construed as an invitation to analyze specific concepts in a definite way. This "definite way" places emphasis upon the contexts in which terms occur and upon the complex of relevant practices involved in their use. Pragmatism does not supply a formula which states once for all what *the* meaning of a statement is; for when its maxim is taken seriously, it excludes the assumption that the meaning of a sentence can be determined in isolation from the system of sentences in which it occurs, the rules governing its acceptance, and the kind of behavior associated with it. It is unfortunate that so much energy has gone into controversy about the wholesale meaning of "meaning," as if any formula could state with adequacy the multifarious ways in which that word is used, instead of being turned into analyses of the specific uses of terms in different contexts. Would it not be well to shelve the term "meaning" in philosophic discussion and talk instead of the way in which terms are *used*? Pragmatism does not constitute another ambitious "prolegomena for every future inquiry," and it would be a pity if, mistaken for such rather than taken as a fruitful leading principle of inquiry, it would meet the fate of the Cartesian, Lockian, and Kantian systems. Peirce himself instituted the sort of analysis of several specific concepts called for by his maxim, and Mach's work is still valuable primarily, it seems to me, because of the splendid examples of such analysis it carried through.

I have already skirted my second point. Peirce's version of pragmatism locates the intellectual purport of conceptions not in individual sensations or perceptions, but in the concrete habits or tendencies to action to which their acceptance leads. "The whole function of thought," he maintained, "is to produce habits of action; and that whatever there is connected with a thought, but irrelevant to its purpose, is an accretion to it but no part of it. If there be a unity among our sensations which has no reference to how we shall act on a given occasion, as when we listen to a piece of music, why we do not call that thinking. To develop its meaning, we have, therefore, simply to determine what habits it produces, for what a thing means is simply the habits it

[7] 5.207. Twenty-five years earlier Peirce wrote: "In how many profound treatises is not force spoken of as a 'mysterious entity', which seems to be only a way of confessing that the author despairs of ever getting a clear notion of what the word means! In a recent admired work on *Analytic Mechanics* it is stated that we understand precisely the effect of force, but what force itself is we do not understand! This is simply a self-contradiction. The idea which the word force excites in our minds has no other function than to affect our actions, and these actions can have no reference to force otherwise than through its effects. Consequently, if we know what the effects of force are, we are acquainted with every fact which is implied in saying that a force exists, and there is nothing more to know". 5.404.

involves. Now, the identity of a habit depends on how it might lead us to act, not merely under such circumstances as are likely to arise, but under such as might possibly occur, no matter how improbable they may be. What the habit is depends on when and how it causes us to act."[8]

It is clear that this pronouncement is at least verbally different from the current version of the verifiability principle, according to which empirical propositions must be reducible to observation *statements* containing various sorts of observation *predicates*. Without intending to minimize the remarkable clarification which such a formulation has introduced or to question its superiority in point of precision over that given by Peirce, it seems to me nevertheless that an adequate empiricism can not afford to neglect Peirce's emphasis upon *habits of action* or to concentrate entirely upon the reduction of one set of statements to others. For in the first place, this emphasis makes evident the continuity of knowledge-getting with other organic activities. It involves the conception of inquiry as occurring in a definite context, instituted to settle specific doubts and problems, and terminating in an equally definite way with the establishment of smoothly working habits of action which have mastered the difficulties for which the inquiry was initiated. Knowledge thus becomes identifiable as the product of overt behavior involving cooperative effort in a community of inquirers, rather than as the outcome of a purely subcutaneous mental activity. So conceived, knowledge is in fact frequently obtained, for the claim to possess it does not involve the preposterous requirement that the outcome of one inquiry be incorrigible by further inquiry, or that unless it carries the traits of absolute finality and all-inclusiveness the product of research is not knowledge. Peirce thus laid the foundation for a theory of inquiry which eschewed a mentalistic, introspective psychology, and he espoused a molar behaviorism at a time when it was regarded as fanciful speculation.

In the second place, Peirce's emphasis is fatal to the conception that science must be grounded upon an indubitable apprehension of simple elements, whether these be atomic-facts, sense-data, or essences, all pre-manufactured and neatly packaged; for it entails the view that alleged "simples" must be contextually interpreted and that they are products of inquiry which has learned to isolate certain features of the environment as reliable clues to what is going on. It points to the fact that the adequate use of even the simplest observational terms of whatever type involves habits of manipulating objects in the environment, and that the established sense of even the most abstract terms of science involves reference at some point to gross, overt activities. Surely, no one would take seriously the professed acceptance of the physicalistic thesis of the reducibility of all terms to those occurring in every-day observation, if that acceptance did not go hand in hand with appropriate types

[8] 5.400.

of gross behavior associated with such observation terms. And the contemporary insistence upon methodological principles as resolutions and rules of language, fails in its objective to exhibit the logical articulation of science if it neglects the practical compulsions involved in the construction and manipulation of technological and laboratory apparatus.

At the risk of treading upon ground on which angels fear to step, I should also like to mention the elementary point that in terms of Peirce's emphasis neither terms nor statements can be regarded as *designating*, independently of the habits involved in their use. Consequently, "the meaning" of expressions is not to be sought in self-subsisting "facts," "essences," or other "designate," but must be construed in terms of the procedures associated with them in specific contexts. Some have suspected, perhaps unjustly, that the recently inaugurated discipline of semantics will open wide the door for the rehabilitation of Bolzano's *Saetze-an-Sich*, Meinong's *objectives*, Russell's *subsistents*, and allied conceptions of the referends of signs. Though such doctrines have had fruitful historical roles, I think it would be a retrograde step if modern logical empiricism were to revive them in a new form; for the great strength and promise of the movement has been its interpretation of the abstract in terms of the concrete, and its resolute turning from speculations which have no ascertainable consequences in issues of observable fact. I can think of no better way to still these suspicions than by placing the study of semantics into a behavioral context, and by instituting an analysis of such key semantic terms as "designation" and "truth" as used in *specific* contexts, in order to reveal the modes of action they signify.

Peirce's critical common-sensism is integral to the pragmatic attitude as developed in the present paper. Though indebted to the Scotch common-sense realists for some of his ideas and language, Peirce had nothing in common with their dogmatic faith in self-evident truths or their attempt to establish a bedrock foundation for current theologies and social theories. His critical common-sensism was an elaboration of his fundamental insight that in any inquiry we must plunge into *medias res* with all the beliefs and prejudices we actually have, and that we can not, even in principle, engage in a universal Cartesian skepticism. Every inquiry uses and takes for granted many habitual modes of action as well as specific assumptions about the course of events, which in *that* inquiry function as indubitables; and many of these assumptions, largely because they are vague, have withstood the test of repeated experience, so that it would be idle to doubt them. The adequacy of specific beliefs and habits is constantly put into question; but there can be no intelligible skepticism concerning our crude experience as a whole, since the formulation of every specific doubt requires distinctions themselves significant only in terms of the procedures of the common-day world. It is not possible, therefore, to dispense with the vague indubitables of every-day experience. Habitual behavior can not be "justified" by any theory of logic or of the universe and it can not be

"clarified" by trying to exhibit it as a complex of psychological or ontological simples, since every attempt to do so must be brought to the test in the work-a-day world of gross, vague distinctions. The justification and clarification can be brought about only by showing what the consequences of such behavior are and that it is adequate to the situation at hand – it being noted that the consideration of consequences and adequacy leads finally to the same sort of gross behavior which furnished the occasion for doubt.

Peirce claimed no infallibility for the beliefs of every-day experience, and indeed one of the cardinal tenets of his thought was a universal fallibilism. Peirce's fallibilism is a consequence of his regarding the method of science as the most successful yet devised for achieving stable beliefs and reliable conclusions; it has nothing to do with the malicious scepticism which rejects science on the ground that its conclusions are after all not established as being beyond the possibility of error, only to invoke a special set of imperatives as indubitable objects of human endeavor. Peirce noted that the conclusion of no scientific inquiry is exempt from revision and correction, that scientists feel surer of their general logic of procedure than of any particular conclusions reached by it, and that the method of science is self-corrective, both as to its own specific features and the specific conclusions gained with it. These insights dove-tail neatly with what has already been said concerning the importance of construing concepts and statements in terms of the procedures associated with them; for it is a simple corollary from this that the conclusions of science must also be understood in terms of the methods used to establish them, so that the reliability of the conclusions must be a function, first and last, of the character of the methods. That is why Peirce found unacceptable theories of atomic facts and sensory simples as indubitable objects of knowledge, or the pretensions of philosophers to map the limits and possible objects of science – for each of these illustrates a dogmatism which blocks the road to inquiry, and to block this road was for Peirce the least forgivable and most dangerous intellectual vice.

Peirce was one of the earliest proponents of the frequency interpretation of probability statements, and though contemporary formulations of that view are superior to his, what he has to say on the general theme may still be read with profit. As is well known, there is still disagreement among competent students as to the scope of the frequency theory of probability and its relation to the procedures of induction. Peirce's views on this point, though not free from difficulties, suggest promising lines of inquiry.

> "The true guarantee of the validity of induction," he declared, "is that it is a method of reaching conclusions which, if it be persisted in long enough, will assuredly correct any error concerning future experience into which it may temporarily lead us.... It may be conceived, and often is conceived, that induction lends a probability to its conclusion. Now

> that is not the way induction leads to the truth. It lends no definite probability to its conclusion. It is nonsense to talk of the probability of a law, as if we could pick universes out of a grab-bag and find in what proportion of them the law held good.... The justification for believing that an experimental theory which has been subjected to a number of experimental tests will be in the near future sustained as well by further such tests as it has hitherto been, is that by steadily pursuing that method we must in the long run find out how the matter really stands. The reason that we must do so is that our theory, if it be admissible even as a theory, simply consists in supposing that such experiments will in the long run have results of a certain character."[9]

Peirce's writings on induction are not uniformly clear, but in the main they are consistent with his insistence upon the character of the *method* used to test them as providing the only identifiable ground for regarding the theories of science as reliable.

Toward the end of his life Peirce enumerated a number of tenets which he regarded as fundamental to his version of prag matism, and which set him off from other thinkers. The list included the following: the denial of necessitarianism; the rejection of any "consciousness" different from a visceral or other external sensation; the acceptance of the notion of infinity as significant; the acknowledgment that there are real habits which would produce effects under circumstances that may not happen to get actualized; and the insistence upon interpreting all hypostatic abstraction in terms of what they would or might come to in the concrete.[10] It is dangerous, I know, to try to force a fluid and developing movement into the framework of a set of rubrics devised for another purpose; nevertheless, it seems to me that on these points contemporary logical empiricism differs from Peirce only in relative emphasis and mode of presentation, and stands closer to him than did most of his own contemporaries. It is not improper, therefore to claim him as a spiritual ancestor of the movement which this congress represents, and as an important formative influence upon the development of at least its American participants.

Peirce once evaluated his own work as follows: "Just as there are many fogies – old and young – who with idle conservatism dispute the value of my work, so, unless the whole congregation of logicians experiences a regeneration, I expect the day will come when another generation of old and young fogies will be equally indisposed to admit that there is any corner of the whole field that I have not turned up, and put into the right condition."[11] The density

[9] 2.769, 2.780, 5.170.

[10] 6.485.

[11] 6.319.

of old and young fogies among logical empiricists is I think vanishingly small, and there is probably no one among its members and sympathizers who would accept Peirce *in toto*, or who would not acknowledge him to have been mistaken on a number of fundamental points, such as his naive conception of absolute space, his curious apriori deduction of the types of actual physical forces, or his failure to note the regulative and definitory function of a number of scientific principles. We can nevertheless honor him with clear conscience for what he achieved of lasting value. Were he still among us he would surely have endorsed the happy marriage of the cultivation of logic and the empirical temper which distinguishes this movement, and he would have joined hands with us in furthering the quest for and the understanding of progressively more adequate tools of inquiry.

THE ESSENCE OF PEIRCE'S SYSTEM

Paul Weiss. "The Essence of Peirce's System." *Journal of Philosophy* 37.10 (9 May 1940): 253–264.

I

It is somewhat of a misfortune – though not without its compensations – for a great philosopher to win no disciples during his lifetime.[1] With no one to expand and apply his main doctrines sympathetically and conscientiously he is likely to lose a grasp of the full meaning of his own views. Unable to see his basic theories in new settings, he is forced to move painfully from position to position with no guide but that provided by a flickering and uncertain vision. The living philosopher needs disciples to give him ballast and balance; the disciples need him to give them insight and direction. It was Peirce's and his contemporaries' tragedy that he had friends and well wishers, but none who both sympathized and understood.[2] It is therefore a remarkable fact that he should have been able to hold so long and so steadily to the same views and could develop them with so much consistency and thoroughness. Yet how much might he (and incidentally we and his contemporaries) have gained had James, who sympathized so much, understood him better? Contrast, for example, "I yield to no one in admiration of his genius ... he's a genius, and I look forward with avidity to his work,"[3] and "There is no more original thinker than yourself in our generation. You have personally suggested more important things to me than perhaps anyone I have known,"[4] with "I have been to C. S. Peirce's lecture which I could not understand a word of, but rather enjoyed the sensation of listening to for an hour,"[5] and the strange description[6] of Peirce's elementary "Lectures on Pragmatism" as "flashes of brilliant light relieved against Cimmerian darkness."[7]

[1] Read in part at the special session on Peirce at the joint meeting of the Eastern and Western Divisions of the American Philosophical Association held at Columbia University, December 29, 1939.

[2] But see G. Stanley Hall's article in *Mind*, Vol. IV (1879), p. 102.

[3] *The Thought and Character of William James* by R. B. Perry, Vol. II, p. 117.

[4] *Ibid.*, p. 414.

[5] *Ibid.*, Vol. I, p. 231.

[6] *Pragmatism*, p. 5.

[7] But cf. also Perry, *op. cit.*, Vol. I, pp. 292, 296, 321, 332, 363, 536; Vol. II, pp. 117, 375,

It is perhaps a greater misfortune, however, for a dead philosopher to win disciples – a tragedy for us and those who follow after. His followers mould his remains into shapes which conform to the passing fashions of the day, or dissect him into a multiplicity of minor and apparently conflicting views. And when those views pass, we risk the loss of the philosopher altogether. With the decline of the Academy we almost lost Plato; Aristotle was almost swept away with the flood which drowned the scholastics; with the decay of objective idealism, Kant and Hegel became men whom we were asked to go around and not through.[8] It is not necessary to place Peirce in the rank of these to remark that he too was a philosopher and is about to be lost to us in similar ways.

I am not concerned with praising Peirce – that would be impertinent – but in doing honor to him on this the hundredth anniversary of his birth. And I can think of no better way than to call to mind that once before he was on the verge of being kidnapped and dismembered.[9] Perhaps it is not too late to remark that the attempt to reduce him wholely to the status of one of the founders or major figures in the development of a symbolic logic, a science of signs, a positivism, empiricism, nominalism, or pragmatism is mischievous and misconceived. Peirce was a metaphysician as well as a logician, a realist as well as a semiotician, a speculative thinker as well as an experimental scientist, an idealist as well as a naturalist, and a pragmatist who had a theory of ethics which acknowledged a fixed and universal ideal. These were not for him, and ought not be for us, inconsistent positions. Truth is rich and complex enough to accommodate both the abstract and the concrete, the temporal and the eternal, the general and the specific, the absolute and the relative, the probable and the certain. Peirce was a philosopher precisely because he saw that these different factors were facets of one encompassing truth and reality, and that philosophy was not a point of view but a study of that which embraces all points of view.

II

Metaphysics, for Peirce, is a sub-order of philosophy. Philosophy is a sub-class of the science of discovery, and this in turn is a branch of theoretical science.[10]

416, 418, 436, 438, 439, and 645. Perry's comments in these places – and particularly in Vol. I, pp. 533, and Vol. II, pp. 406ff – seem to me to obscure rather than to clarify the nature of Peirce's thought and his relation to James. This is especially true of the account of Peirce's tychism and synechism in Vol. II, pp. 411–412.

[8] See, e.g., William James's *Collected Essays and Reviews*, p. 437, and John Dewey's *Characters and Events*, Vol. I, pp. 63–68.

[9] See *Collected Papers of Charles Sanders Peirce*, edited by Charles Hartshorne and Paul Weiss, 5.414.

[10] See 1.239ff, 1.282, 6.6.

The function of metaphysics is to explain the variety of the universe. "The universe has an explanation, the function of which ... is to unify its observed variety."[11] Its data is observable by every man at every moment.

> Metaphysics, even bad metaphysics, really rests on observations, whether consciously or not; and the only reason that this is not universally recognized is that it rests upon kinds of phenomena with which every man's experience is so saturated that he usually pays no attention to them. The data of metaphysics are not less open to observation, but immeasurably more so, than the data, say, of the highly developed science of astronomy. [6.2] Philosophy contents itself with observations such as come within the range of every man's normal experience and for the most part in every waking hour of his life.... These observations escape the untrained eye precisely because they permeate our whole lives, just as a man who never takes off his blue spectacles soon ceases to see the blue tinge.[12]

It is impossible to dispense with metaphysics; all one can do is to replace one metaphysical view by another. "Every man of us has a metaphysics, and has to have one.... There is no escape from the need of a critical examination of 'first principles'."[13] To reject metaphysics is to exhibit a preference for a dogmatic view instead of for a carefully developed, self-conscious, and self-reflective one.

> Find a scientific man who proposes to get along without any metaphysics – not by any means every man who holds the ordinary reasonings of metaphysicians in scorn – and you have found one whose doctrines are thoroughly vitiated by the crude and uncriticized metaphysics with which they are packed. [1.129]

Every science, in fact, presupposes propositions beyond its power to evaluate.

> The special sciences are obliged to take for granted a number of most important propositions, because their ways of working afford no means of bringing these propositions to the test. In short, they always rest upon metaphysics.[14]

[11] 1.487. In 1.405, however, Peirce remarks that "There is a class of facts of which it is not reasonable to expect an explanation, namely facts of indeterminacy or variety." These two statements are not really in conflict. The former refers to the meaning of the variety, the latter to its occurrence.

[12] 1.241. See also 6.5.

[13] 1.129.

[14] 1.129.

When, then, some moderns define all metaphysical discourse as contraband they are merely asking for the privilege of allowing their own metaphysical preconceptions to go unexamined and uncriticized.[15]

III

Metaphysics, for Peirce, differs from the special sciences only in its inescapability, evidence, and generality, and agrees with them in being dependent on mathematics, phenomenology, esthetics, ethics, and logic.

According to him, it is dependent on logic in a two-fold way. It is concerned with problems whose resolution requires maturity, if not subtlety, of thought. "Metaphysics is a most difficult science, presenting more pitfalls for the uninformed than almost any, which a mere amateur at it would be foolish to fancy that he could escape."[16] "Metaphysical philosophy has no work that *hard thinking* can do. What is needed above all, for metaphysics, is thorough and mature thinking."[17] One who is unable to use the powerful and effective instrument of modern logic, particularly the logic of relatives, is bound to be trapped in the paradoxes and prejudices of the past.

> Unless the metaphysician is a most thorough master of formal logic – and especially of the inductive aide of the logic of relatives ... he will inevitably fall into the practice of deciding upon the validity of reasonings ... by the impression those reasonings make upon the mind.... Just look at the dealings of the metaphysicians with Zeno's objection to motion.... The metaphysician who is not prepared to grapple with all the difficulties of modern exact logic had better put up his shutters and go out of trade. [1.624]

> A metaphysics not founded on the science of logic is of all branches of scientific inquiry the most shaky and insecure. [2.36]

Secondly, as both Aristotle and Kant recognized, metaphysical concepts should be adaptations of logical ones.

> If the theory of logic which is to be developed in this book has any truth, the position of the two greatest of all metaphysicians, Aristotle and Kant, will herein be supported by satisfactory proof, that that science

[15] See my "Metaphysics: The Domain of Ignorance," *Philosophical Review*, Vol. XLIII (1934), pp. 401–406; *Reality*, pp. 93–95.

[16] 1.204.

[17] 3.406.

> [metaphysics] can only rest directly upon the theory of logic. Indeed it may be said that there has hardly been a metaphysician of the first rank who had not made logic his stepping stone to metaphysics. [2.121.]
>
> The only rational way would be to settle first the principles of reasoning, and that done, to base one's metaphysics upon those principles. [2.166.]
>
> Metaphysical conceptions ... are merely adapted from those of formal logic. [1.625.]
>
> Metaphysics consists in the results of the absolute acceptance of logical principles not merely as regulatively valid but as truths of being.[18]

Peirce's metaphysical categories, chance, law, and continuity,[19] seem to be adaptations of the three basic inferential processes of abduction, deduction, and induction.[20] The power, growth, and self-corrective nature of logic, and particularly of induction, seem to be the clue to his view that all the elements of the universe are being gradually solidified into a single rational whole.

> Synechism [i.e., continuity] is founded on the notion that the coalescence, the becoming continuous, the becoming governed by laws, the becoming instinct with general ideas, are but phases of one and the same process of the growth of reasonableness. This is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically. [5.4.]
>
> Metaphysics is the science of reality. Reality consists in regularity. Real regularity is active law. Active law is efficient reasonableness, or in other words is truly reasonable reasonableness. Reasonable reasonableness is Thirdness as Thirdness. [5.121.]

(That induction is a form of Thirdness as Thirdness is evident from 2.89–96.)

Peirce, however, was very insistent that it would be wrong to rest logic on metaphysics.[21] "To found logic on metaphysics is a crazy scheme."[22] He would have found even more to object to in Dewey's attempt to found it on

[18] 1.487. See also 3.487, and 5.448n.

[19] See 6.32 and 6.202.

[20] See 1.485, 1.487, 6.32.

[21] But see the qualification in 4.571.

[22] 2.168; see also 2.36f.

biology or the practices of scientists. Logic was abstract, formal, with its own laws and conditions; he could see no rationale in making it dependent on the concrete, the specialized, the contingent, and fallible. Peirce reviewed the *Studies in Logical Theory*[23] and observed that it could not offer an adequate norm of what was valid or not. He would comment on Dewey's later work perhaps to the effect that pragmatism or instrumentalism can not determine, but must presuppose, a logic, and that the attempt to deal with logic in any but its own terms would destroy its value as a support of the exact sciences.[24]

Peirce's insistence on the priority of logic prevented him from affirming that there was a deep and important sense in which logic rested on metaphysics as surely as metaphysics rested on logic. But, he himself was able to affirm that logic was social in its essence[25] only because he had already rejected the Leibnizian universe of monads. "Leibnitz is a pure individualistic nominalist" (6.393). He could view the laws of logic as habits[26] only because he held that laws and universals were real.[27] Logical laws on any view must have some kind of being; realities on any view must have some kind of rationale. For an evolutionary philosopher such as Peirce,[28] logic and metaphysics must be but different ways of expressing the truth that the world has a progressively rational structure capable of being mastered by beings who are becoming more and more reasonable.

> We have, as a deduction from the principle that thought is the mirror of being, the law that the end of being and highest reality is the living impersonation of the idea that evolution generates. [1.487.]

> What we think of cannot possibly be of a different nature from thought itself. For the thought thinking and the immediate thought-object are the very same thing regarded from different points of view.[29]

IV

Because his logic and his metaphysics were intimately connected, Peirce had no difficulty in resolving what today is termed the "semantic" problem of the

234 *Nation*, Vol. 79 (1904), p. 220.

24 See 2.36, 5.452.

25 "The social principle is rooted intrinsically in logic." [5.354.]

26 3.15ff, 5.268, 6.144, 6.280ff.

27 5.503, 5.423, 1.15ff, 4.1ff.

28 1.174, 1.175.

29 6.339. See also the quotations above from 5.121 and 5.4.

relation of signs to their objects. His answer in brief is contained in his observation that an object is itself a kind of thought or sign.

> Every sign stands for an object independent of itself; but it can only be a sign of that object insofar as that object is itself of the nature of a sign or thought. For the sign does not affect the object but is affected by it; so that the object must be able to convey thought, that is, must be of the nature of a thought or sign. [1.538.]

Signs duplicate the structure of, interact with, or, in the ideal case, embody the same laws or habits that their objects do. It was his view that the entire cosmos was overrun with signs,[30] and that every thought,[31] law,[32] and man[33] was a sign, i.e. an entity which had meaning only in terms of some other more comprehensive and rational sign which welded the totality of things and beliefs together into fixed and perfect whole.

> What anything really is, is what it may finally come to be known in the ideal state of complete information, so that reality depends on the ultimate decision of the community; so thought is what it is only by virtue of its addressing a future thought which is in its value as thought identical with it, though more developed. [5.316.]

> The very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase of knowledge. [5.311.]

Peirce never gave sufficient weight to the fact of individual existence[34] and undoubtedly exaggerated the place that signs occupied in men and things. But what is important today is the fact that his firm realism prevented him not only from having difficulty with semantics, but of committing the modern error of supposing that the laws of logic were arbitrary or conventional, or that "pragmatics" had to do with the "action, state and environment of a man who speaks or hears."[35] The heart of the pragmatic maxim lies in its interpretation

[30] "The entire universe ... is perfused with signs, if it is not composed exclusively of signs" (5.448n).

[31] "Thought is in itself essentially of the nature of a sign" (5.594).

[32] "A law is in itself nothing but a general formula or symbol" (5.107).

[33] "Man is the thought" (5.314). "A human being ... is a sign himself" (6.344).

[34] "Individualism and falsity are one and the same" (5.402n). See also 5.503.

[35] See Carnap's "Foundations of Logic and Mathematics" International Encyclopedia of Unified Science, vol. 1, number 3, p. 4.

of the meaning of concepts as involving a reference, not to the particular or existential, but to the rational or general.

> If it be admitted that action wants an end, and that that end must be something of a general description, then the spirit of the maxim itself, which is that we must look to the upshot of our concepts in order rightly to apprehend them, would direct us towards something different from practical facts, namely to general ideas, as the true interpreters of our thought. [5.3.]

> The most perfect account of a concept that words can convey will consist in a description of the habit which that concept is calculated to produce. [5.491.]

V

Peirce was a laboratory scientist who had made careful experiments with the pendulum and long and detailed observations in astronomy and on weights and measures.[36] Perhaps that is the reason he refused to exaggerate the evidence, purity, independence, or universality of science. The premises of science, Peirce saw, were directly observable, the conclusions not.

> We cannot see energy, nor the attraction of gravitation, nor the flying molecules of gasses nor the luminiferous ether, nor the forests of the carbonaceous era, nor the explosions in the nerve cells. [6.2.]

If then it is observables with which we are really concerned we ought to devote ourselves to phenomenology and metaphysics. He saw too that the development of science was determined in part by the costs of experimentation,[37] the ethics of its practitioners[38] and by their unexamined preconceptions.[39] He

[36] The volume containing this material is almost ready for publication and has been for some time. It is doubtful, however, in view of the slow, though progressive, sale of the earlier volumes, whether it will be published in the near future. There is a biography, incidentally, of Peirce in the *American Dictionary of Biography*; autobiographical comments are to be found in the published volumes, indexed under "autobiographical references" in the Index of Subjects.

[37] "It does not pay (in any given state of science) to push the investigation beyond a certain point in fullness and precision" (1.122).

[38] "There is an ethics indissolubly bound up with it [science] – an ethics of fairness and impartiality" (6.3).

[39] See, e.g., 1.109, 1.204.

was clear and insistent on the fact that the special sciences presuppose work in metaphysics, logic, ethics, esthetics, phenomenology, and mathematics,[40] for these deal with their preconceptions, provide them with their norms, ends, and distinctions, and mark out the realm of the things that are really possible. The scope of science, he saw, was far from universal; it could "no more deny a miracle than it could assert one,"[41] nor determine the nature of the distinction between fact and fancy.[42] He was inclined to exaggerate its uselessness ("true science is distinctly the study of useless things"[43]) and to make a fetish of the word[44] but that did not, fortunately, prevent him from seeing that it is the proper pursuit only of those who are imbued with a sincere desire to learn,[45] and that it would be inconsistent with that desire to block the road of inquiry by making arbitrary decisions as to what can and can not be known.[46] No one imbued with a love of knowledge would try to deny truths and inquiries because they were uncongenial,[47] and no one who had reflected could term himself a "fallibiist" without recognizing the metaphysical truth that there were real laws of nature which changed and grew.[48]

VI

It was this interpretation of the nature of laws which made it possible for Peirce to be both a naturalist and an idealist. All naturalists and most idealists, I suppose, deny that there are any completely transcendent realities; both can affirm the existence of regularities in nature. They diverge perhaps primarily on the question as to whether matter or mind, efficient or final causation, provides the clue to the secrets of the universe.[49] Peirce, who held that his philosophy "resuscitated Hegel" (1.42) and that matter was habituated mind (6.25) was obviously

[40] See 1.183f, 1.249–250.

[41] 1.90.

[42] 6.6.

[43] 1.76. See also 1.55, 1.618.

[44] See 5.384f where the method of determining beliefs by something real is perversely identified as the method of science and science alone. See also 1.183ff where phenomenology, ethics, esthetics, logic, and metaphysics are described as positive or experimental sciences.

[45] "It is not knowing, but the love of learning, that characterizes the scientific man" (1.44).

[46] See 1.135ff.

[47] See 1.57.

[48] See 1.173f.

[49] Cf. 6.24, 1.220.

an idealist. But since he held that matter existed, that it was subject to efficient causation, and that laws were immanent in things, he was obviously a naturalist as well. He reconciled the two by showing their interdependence, while leaning towards the idealistic account.

> Final causation without efficient causation is helpless.... Efficient causation without final causation, however, is worse than helpless, by far; it is mere chaos. [1.220.]

> Physical evolution works towards ends in the same way that mental action works towards ends, and thus in one aspect of the matter it would be perfectly true to say that final causation alone is primary. Yet, on the other hand, the law of habit is a simple formal law, a law of efficient causation; so that either way of regarding the matter is equally true, although the former is more intelligent.[50]

Naturalism might, however, be defined as the view which attempts to explain everything by the operation of force, combination, or aggregation. If this be its meaning, then Peirce not only supplements it with an objective idealism which insists on the presence of an element of law, mind, or rationality in the universe, but with a subjective idealism or empiricism which stresses the element of immediacy. Peirce insisted on all three, and thereby resuscitated Hegel, but "in a strange costume" (1.42).

> Had Hegel, instead of regarding the first two stages with his smile of contempt, held on to them as independent or distinct elements of the triune Reality, pragmaticists might have looked up to him as the great vindicator of their truth.[51]

It is strange that Peirce did not see that in making this change he also resuscitated and transformed both the traditional naturalism and the traditional empiricism and subjectivism. All three views require and supplement one another.

We have now reached what I think is the essence of Peirce's system. From the beginning to the end of his career he devoted his energies to developing and applying the doctrine that there were three basic and irreducible categories – being, opposition, and reason, or immediacy, action, and mediation, or, as he preferred to say, Firstness, Secondness, and Thirdness. Suggested originally by Kant[52] they were justified by logic and observation, and eventually became

[50] 6.101. See also 1.437.

[51] 5.436; see also 5.91.

[52] See 1.563.

the clue for him to the classification of the sciences, the fundamental divisions of semiotics, metaphysics, and logic, and suggested to him the nature of the object of esthetic inquiry.

Each of these categories should be viewed as prior to and explanatory of the others.[53] The immediate is the aboriginal, the first in the order of evolution,[54] "the most primitive, simple and original of the categories" (2.90). The existential or active is first in the order of fact, the locus of both the immediate and the rational. "Existence is dyadic" (1.329) and as present must be a first (2.85, 1.341) and as intelligible must embody a third (5.431). The third is first in meaning, relating and completing the others.[55] Each category is something in itself, each is distinct from and contrasted with the others, and each is intrinsically intelligible.[56] Peirce, however, was unfortunately too dominated by the Kantian and Hegelian values to give sufficient weight to the first two categories. Otherwise he might have been more ready to describe them all as views or perspectives on the whole of things, each embracing and being embraced by the others. Instead he stressed the third category and never explicitly took it to be subsidiary to the other two.

VII

Peirce's stress on Thirdness with his coordinate acknowledgment of the other two categories, is evident in his account of pragmatism. Pragmatism, for him, is a method of evaluating hypotheses[57] or "firsts" in terms of an ultimate end, or "second."[58] Peirce shifted his emphases from time to time, and as the years went on found more and more features which differentiated his views from others,[59] but, throughout, his doctrine seems to be marked off by its recognition of the basic role which rationality, order, continuity, and habit play in the interpretation of a concept. "I was speaking [in my original pragmatism paper] of meaning in no other sense than that of *intellectual purport*, ... or adequate proper interpretation of any symbol."[60] Here he seems to be one with Dewey. But he differs from Dewey in remarking that pragmatism,

[53] See 2.89ff.

[54] See 1.490, 1.474.

[55] "Thirdness is that which is what it is by virtue of imparting a quality to reactions in the future" (1.343). See also 5.91.

[56] 2.89f. But see also 1.353, 1.530.

[57] 5.196.

[58] 4.539.

[59] 5.423.

[60] 5.402n. See also 5.3, 5.429.

instead of refusing to acknowledge the reality of a fixed and ultimate end of action, is inevitably forced to acknowledge one. "In order to understand pragmatism," he remarks, "it is incumbent upon us to inquire what an ultimate aim, capable of being pursued in an indefinitely prolonged course of action, can be."[61] He thinks it is the "free development of the agent's own esthetic quality" in a state of freedom from disturbance by the external world.[62] The proof of this he thought only metaphysics could provide. If he is right, then pragmatism, instead of eliminating metaphysics, depends for its very meaning on the successful pursuit of metaphysical inquiry. Certainly something like this view is necessary if pragmatism is to be an effective and rational method for directing inquiry, for without some definite and ultimate end in view we can do nothing more than experiment and experiment without knowing why we should.

But more important is the fact that once the first and second categories are recognized to have a status equal to that of the third, there ought to be a kind of pragmatism whose function is to unite action and reason by means of an intuition into ideals, and another kind whose function is to relate feeling and reason dynamically by way of action. The former would be a pragmatism in the realm of ends, the latter a pragmatism in the field of conduct. They would be methods by which we clarified, not our concepts, but our efforts and our emotions, and these, not by intellectual devices, but by insight, on the one hand, and ethical behavior on the other. Peirce rightly insisted that the only proper way to "clarify" ideas was by means of other ideas. But what, apart from a rationalistic prejudice, prevented him from seeing that there was an analogous way in which intuition clarified the meaning of action and ethical conduct clarified the nature of feeling? Most of Peirce's limitations, as I see it, follow from the fact that he never adequately saw that the first and second categories were as basic and as revelatory as the third. If this be true, then the importance of Peirce for the future will lie in his capacity to provide the basic material and distinctions by which his own insights can be completed and transcended.

VIII

There are many important matters on which I have not touched, such as Peirce's "critical common-sensism," his logic of abduction, his distinction between logic and mathematics, and his views on psychology, theology, perception, and history. Many passages too can undoubtedly be produced which seem to, and perhaps actually run counter to, those here quoted or

[61] 5.135.

[62] 5.136.

expressed. Neither of these is, I think, a serious matter. The relation between what has here been included and what neglected can, I think, be easily discerned from the published papers;[63] the contradictions and wobblings in position reveal, I think, little more than that philosophers, like other men, are human and fallible. Nor would it be serious if the present thesis that Peirce was a systematic, comprehensive thinker, should find no favor. Systems perhaps are important primarily because they provide an opportunity for systematic criticism, appreciation, or improvement. What would be serious would be the reduction of Peirce to the level of a "seminal mind," the full flower of which we are today enjoying, for that would mean that Peirce had no place among the perennial philosophers, and must be defined as one who already is, and in a deep and regrettable sense, was always out of date.

[63] The passages referred to in this essay often contain, not only references to other places where the points here made are reaffirmed or elucidated, but explicit comments on questions which have not been here discussed. Nothing less than a full use of these references would provide and adequate grasp of the heart of Peirce's views. In this sense, the present paper can pretend to give only an outline of the essence of the system, and but the barest hint of its richness and variety.

THE ACCIDENTS OF PEIRCE'S SYSTEM

Justus Buchler. "The Accidents of Peirce's System." *Journal of Philosophy* 37.10 (9 May 1940): 264–269.

Professor Weiss contends in the preceding article that Peirce's philosophical contributions acquire their essential significance when regarded as elements of a system. He believes that if the system is "dissected" or "dismembered" its constituent theories are in danger of assimilation and inevitable distortion by philosophic factions. This, of course, presupposes what has so often been contested, that all the theories are compatible. Professor Weiss admits that quotations contradicting his own can be advanced, but belittles their importance. Probably he would not claim that he had established the validity of the systematic interpretation, but that he had begun what could be completed.

Why Professor Weiss should dread abstraction from Peirce is not clear. Whatever cumulative growth there has been in the stream of classical philosophy has been achieved not by modifying a ready-made system, but by the partial or limited acceptance of a given philosopher's work through discriminating selection, and this where the homogeneity of the previous system was far greater than in Peirce. Kant, for instance, could extend the philosophic horizon by abstracting from philosophers of widely opposite tendency, and we do not have to be told today of the possibility, in fact the advisability, of profiting from Kant while freeing ourselves from the outlines of his system. Only as thus assimilated can theories contribute to that progressive growth of cooperative philosophizing which Peirce so ardently desired. As for the evil of distorted interpretation, it is as likely to befall an entire system as a single theory. Professor Weiss's interest in preserving the distinctive character of Peirce's philosophy, its esthetic quality as a unique historical whole, perhaps reflects a preference of his own for individualism in philosophic method.

Peirce himself did intend a grand system. I am not here concerned with any exhibition of inconsistencies, though I can not refrain from remarking that he who establishes the internal congruity of a philosophy of common sense with an anthropomorphic panpsychism will prove himself very dexterous indeed. There is a much more serious consideration. It could be shown, by a sufficiently detailed analysis, how vicious are the consequences of interpreting Peirce's individual theories primarily in terms of their place in his total scheme; how, for example, we should misunderstand the conception of falli-

bilism if we took seriously an assertion that it is closely tied up with metaphysical evolutionism. The reason is that the better of the theories were developed as answers to specific problems, and the results of such inquiries do not respect esthetic demands. Certainly any collection of opinions can be harmonized if we are willing to pay the price of obscurity. In Peirce the price is great, and it is doubtful that we can make the alternative claim of poetic value for the system. But it is with hesitation that one warns of obscurity, because philosophers apparently disagree more than ever on what is and is not obscure. Thus Professor Weiss considers James's appraisal of the Lectures on Pragmatism ("flashes of brilliant light relieved against Cimmerian darkness") a "strange description" of an "elementary" work, while to me it has always seemed that no description could be more accurate.

In controverting the alleged "intimate connection" between the phenomenology, logic, and metaphysics of Peirce, I must appeal to the very unsubtle distinction between what Peirce says and what Peirce does. We can find him to say almost anything somewhere or other. He might, for example, tell us that pragmatism "cannot be understood" unless such-and-such a principle is presupposed. If, however, after examination it proved to be the case that in the great series of papers on pragmatism or on the logic of empirical science it *was* stated and *was* understandable without employing that principle, this would illustrate what I mean by distinguishing between his saying one thing and doing another; and his saying what he says could reasonably be explained as an *obiter dictum* designed to help unify his projected system. What do we find when we use this procedural criterion?

(1) Peirce *speaks* of pragmatism in one breath with metaphysics and ethics, but any reader can confirm the fact that the *actual formulation* of pragmatism, as the principle of interpretation that he intended it to be, is rooted in logic or general semiotic alone. Procedurally examined, it becomes clear that the various papers on pragmatism are elaborate attempts to define a certain sub-class of "logical interpretants" of a sign.[1] (Cf., e.g., 5.464–496.) More than once Peirce says that pragmatism assumes the truth of synechism, the principle of continuity. Now, is not synechism one of the foundations of Peirce's metaphysics? No doubt – but this does not mean that it must itself be a metaphysical assertion. And, in fact, when Peirce makes statements like those relating it to pragmatism, he is thinking of it as a methodological principle, which is precisely what he defines it as in Baldwin's *Dictionary*: "Synechism is not an ultimate and absolute metaphysical doctrine; it is a regulative principle of logic, prescribing what sort of hypothesis is fit to be entertained and examined" (6.173). My purpose is not to match quotations with Professor Weiss, but I must call attention to the numerous occasions on

[1] See my *Charles Peirce's Empiricism*, §§29–34, 40.

which Peirce protests that his pragmatism is "no doctrine of metaphysics" but a "logical rule" (cf. 5.18, 423, 464–5, 469; 4.534; 6.482, 490, etc.).

(2) Peirce does say, as Professor Weiss points out, that the sciences must turn to metaphysics for certain of their assumptions, but he never says that they must turn to any but the scientific *method*; on the contrary, he is unwaveringly insistent that "Philosophy ought to imitate the successful sciences in its methods" (5.265). Pragmatism was intended to be the logical instrument enabling it to do this. After its divorce of the genuinely problematic from the pseudo-problematic, "what will remain of philosophy will be a series of problems capable of investigation by the observational methods of the true sciences" (5.423). Moreover, pragmatism is based on a study of science, and is not a methodological legislator to science. The pragmatic method "is no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today" (5.465). To say, as Professor Weiss does, that for Peirce the various branches of philosophy "provide" the special sciences "with their norms, ends and distinctions," is quite evidently a misconstruction.

(3) Peirce sometimes does make semiotic distinctions in phenomenological terms, but he does not *have to* do so, and he can and *does* make the same distinctions in logical terms alone. The distinction between different kinds of signs is not arrived at as the result of phenomenological analysis; the case is rather that, once the distinction is made, phenomenological analysis will *discover* in it a manifestation of the three categories, just as it can find them manifested in anything whatsoever that is given to it. Sign distinctions, classifications, and analyses are made by observing "such signs as we know" (2.227), abstracting certain characteristics, and concluding what must hold good of all signs. This logical process Peirce calls "abstractive observation" or "ideal induction" (or "ideal experimentation"). It is, according to him, the instrument of mathematical reasoning; and certainly mathematics, whether in his scheme, in his procedure, or in universal estimation, is independent of phenomenology. The plain fact of the matter is that a far better case can be made out for the view that in Peirce the basic principle of phenomenology, the distinction of the three categories, is suggested by a distinction within purely formal logic – that of the monadic, dyadic, and triadic forms of predicates (rhemata) in the logic of relatives (cf. 3.63, 3.422, 5.469). A First may be unambiguously defined as that character which would be expressed by some statement about a quality, a Second as that character expressible by a statement of a dyadic relation, a Third as that character expressible by a statement of a triadic relation; or, to use Peirce's language, the categories are the three classes of characters defined respectively by "absolute," "simple relative," and "conjugative" predicates. It is significant that when Peirce gives his demonstrations that there can be no more than three classes of

indecomposable categories or predicates, these proofs are not based on phenomenological or metaphysical grounds but have, as he emphasizes, a purely logical or mathematical character (e.g., 1.346–7, 1.561–2, 3.63, 3.421–2).

In view of the foregoing it is difficult to understand what Professor Weiss means when he calls the doctrine of the categories "the essence of Peirce's system." What are these categories, anyway? Peirce vacillates between an ontological and a methodological conception of them. When he describes them as quality, fact, and thought, or as spontaneity, opposition, and reason, or in terms of any other such triad of concepts, he appears to warrant the former interpretation. But that he did not intend such an interpretation is clear both from his explicit declaration that phaneroscopy (phenomenology) "has nothing to do with the question of how far the phanerons it studies correspond to any realities" (1.287) and from the fact that he coined for the categories the neutral names of Firstness, Secondness, and Thirdness. The purpose of coining these names was to establish the most general possible means of discriminating all other concepts. Firstness, Secondness, and Thirdness are concepts which enable us to classify, organize, and describe any kind of experience (whether it consists in the smell of rotten cabbage or the experience of mathematical reasoning), and they are applicable to all other concepts for this reason. Peirce *has* ontological categories: mind, matter, and evolution; chance, law, and habit-taking. But these are simply one manifestation of the categories, neither more nor less significant than others, like the logical concepts of abduction, deduction, and induction, or icon, index, and symbol. In the special sciences, the psychological concept of feeling, for example, is a First; the biological concept of heredity is a Second; and so on (cf. 6.32).

A moment's reflection will show that neither the metaphysical nor the methodological interpretation sheds light on the assertion that the doctrine of the categories is "the essence of Peirce's system." Is it the essence of the system because it suggests to him (granting this questionable point) how the sciences should be classified? We might as well argue that the concept of abduction is the essence of the system because the principles of all the sciences are hypotheses and all hypotheses are the results of abduction. Does it help to define the meaning of concepts in other subject-matters? But while induction, for example, is said to exemplify Thirdness, it would be as fantastic to suppose that Peirce formulates his principle of categories with the help of the principle of the categories as to suppose that he formulates principles of the special sciences in this way simply because he categorizes their concepts.

If Professor Weiss's purpose in locating the "essence" of Peirce's system is to discover the "first principles" on which this system rests, he is grossly misled by Peirce's classificatory scheme, in which phenomenology is "order 1" of philosophy. Peirce's actual philosophic practice accords not with this scheme

but with his fallibilism and experimentalism. One of the eloquent lessons of fallibilism is that no intellectual discipline whatever can have an absolute foundation. Neither the principle of the categories nor any other is the fountain or starting-point of his philosophy. His aim was much less to establish a fixed structure for his "system" than to discover as many independent sources of confirmation as he could for all the theories that constituted it. Order he recognized as an essential of intellectual economy, "as of every other" (5.392), but disproportionate attention to order is precisely his criticism of the classical philosophers; and accordingly he placed himself in the ranks of "laboratory" as opposed to "seminary" philosophy. He would hardly subscribe to the vague account of philosophy attributed to him by Professor Weiss, "a study of that which embraces all points of view." However prosaic some among us may judge him to be, the fact is that he conceived of philosophy as a science which like any science must learn to employ stern canons for the discrimination of evidence, and the ultimate goal of which is universal agreement and a uniform terminology rather than poetic expression of individual perspective. Striking testimony of faithfulness to the scientific ideal is his habit of pointing out and painstakingly correcting specific errors that he had committed in earlier papers.

Professor Weiss believes that Peirce "is about to be lost to us." It may be that by neglecting the systematic element in Peirce we are in danger of overlooking some interesting possibilities. But a much greater danger lurks, that of petrifying his philosophic researches, as we seem to have petrified Royce's. To strain principally for the conservation of his picturesque architectonic will scarcely be to provide the corrective which he lacked while alive. It would be better to honor him in the act, learning from the rich conceptions and potentialities of his thought by intelligent dissection rather than by the esthetic contemplation of their dubious unity.

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INTRODUCTION

William James was born in New York City on 11 January 1842. His father, Henry James Sr., was a wealthy and religious intellectual who had close relationships to many prominent literary figures, including the transcendentalist Ralph Waldo Emerson. The origin and justification of faith in personal religious experience, a central principle for Protestantism and transcendentalism, became James's own philosophical view. James's father provided his children with an unusual education while the family lived in a variety of cities across America and Europe. His younger brother, Henry James, became one of America's most important novelists whose writings display a deep affection for European culture. William's own preference was for America and its peoples' love of adventure and invention.

After abandoning painting, James studied biology, quickly accepting Darwin's theory of evolution. He pursued a medical degree at Harvard University and graduated with the M.D. in 1869. In 1872 James began teaching physiology at Harvard, but his primary interest was psychology, especially the physiological and experimental psychology that he had seen during earlier travels to Europe. James was permitted to teach this psychology at Harvard starting in 1875, and he founded the first psychological laboratory in America. Since psychology theorized about the mind's operations, it was then considered as a part of philosophy, and James became a professor of both psychology and philosophy. Through the 1880s he wrote about consciousness and the functions of the mind, and published *The Principles of Psychology* in 1890.

The Principles of Psychology is still the most important and provocative psychological text ever written by an American. John Dewey's philosophy was deeply influenced by this work. Some of the writings of his friend Charles Peirce closely supported James's views on belief and truth. James announced in 1898 that he also was a pragmatist, and defended his version of empirical pragmatism against the other two dominant philosophies of that time, realism and idealism. His entire career was devoted to teaching at Harvard University. His most famous book, *Pragmatism*, was published in 1907. Until James's death in Chocoura, New Hampshire on 26 August 1910, he wrote about experience and mental concepts, applications of the pragmatic theory of truth to morality, religion, and science, and his vision of a pluralistic metaphysics.

Biological Mind and the Stream of Consciousness

James's pragmatism developed from his investigations into the mind's capacities. Philosophy in the 1880s and 1890s was energized by controversies that would now be called issues in "philosophy of mind" or "philosophical psychology." Responsibility for such an explosion of intense creativity and debate rests primarily on two profound developments: the rising acceptance of Darwinian evolution, and the expanding interest in psychological experimentation. They encouraged the revolutionary notion that human beings must be studied as physical organisms operating to survive in a natural environment. William James and John Dewey were the leading psychological philosophers who explored the emerging frontiers of philosophy of mind. During the 1880s and 1890s they established a novel approach to the understanding of human cognition and behavior that became known as "functionalism." This theory was broadly naturalistic, rejecting both materialism and idealism.

Functionalism is primarily defined by its thesis that psychology is the study of mental life as an adaptive organic process. This study of the mind as a natural ability is an attempt to replace Cartesian dualism with naturalism, and James and Dewey adopted a naturalistic attitude towards the human being and all of its abilities. Their kind of voluntaristic naturalism requires the existence of free will, since functionalism emphasizes the mind's ability to make decisions and control behavior. James and Dewey were unusual naturalists, because most naturalists were materialists who believed that the universe was deterministically controlled only by natural laws.

In the 19th century materialistic philosophers had little to say about the human intellectual abilities. Materialism typically reduces the mind to just the mechanical workings of the brain, or declared that consciousness is just the epiphenomenal by-products of the brain's activity. The largest contribution of materialism to modern philosophy of mind rested on its mechanistic theory of the origin of ideas. Materialism usually supported sensationalistic empiricism by locating the source of information about the world exclusively in the mechanical activities of the sense organs, stimulated in turn by the transmission of motion from forceful contact with physical bodies in nature. Information about the surrounding environment is generated by the correct kind of interaction between the natural word and the natural workings of the brain. Aside from possessing a properly working nervous system, the perceptive observer is treated as a passive receptacle of this information for which the observer deserves no responsibility or credit. Sensationalistic empiricism permits the rational manipulation of information into more complex combinations of association. But aside from the use of standard logical tools, any deviant manipulation or creation of ideas can only result in the serious risk of deception, illusion, and error.

Materialism and sensationalism prevailed over German idealisms and lingering dualisms, standing victorious across Europe from Scotland to

Austria during the middle decades of the 19th Century. But despite the obvious affinities between materialism, evolution, and psychological experimentation, their combination in the 1870s slowly eroded sensationalism's dominance. This erosion was accelerated by suddenly re-born post-Kantian idealisms which exposed the many inconsistencies and paradoxes of any empiricism which claims that knowledge of the natural world of physical objects and their lawful behavior is "built up" solely out of raw sensory materials possessing neither coherence nor meaning. Sensationalism's denial that the mind's knowing faculties help to construct the basic experiential information was opposed by idealism's counter-claim that without such constructive assistance no genuine experience of the world could occur. Evolution's perspective on the physiological role of the nervous system, and psychological experimentation on actual mental processes, decisively tipped the scales against sensationalism. Together they established that the human observer selected, filtered, and shaped experiences of the world.

This revolution replaced the passivism required by sensationalism with the activism taught by what can be termed "voluntarism." Voluntarism emphasized the role of the will in directing all human experience and activity. Voluntary actions should even encompass the acquisition of information about the environment. This goes well beyond the trivial idea that organisms must orient themselves to sources of sensations, by claiming that the very content and meaning of any experience is partially dependent on the goal-directed activity pursued by an organism. Voluntarism was compatible with idealism to the extent that they agreed that the on-going mental activities of a human being were largely responsible for the significance and meaning of one's experience. Voluntarism and idealism were unified by many philosophers in "organicism." Organicism, inspired by the German Romantic idealisms of Schelling and Hegel, rejected the materialistic and deterministic philosophy with the metaphor of the living organism. Its defense of teleological explanations of both human behavior and the natural world, permitting the existence of free will, enjoyed a renaissance in the late 19th Century.

Philosophers at the forefront of physiological and experimental psychology in Germany were typically aligned with idealism, voluntarism, and organicism. Primary examples include Gustav Fechner, Hermann Helmholtz, Hermann Lotze, and Wilhelm Wundt. The Americans who were most completely aligned with voluntaristic organicism were William James and John Dewey. However, they replaced the idealistic foundation for voluntarism with naturalism. They explicitly applied biological and physiological terms and principles to their experimental study of the mind's processes. Their philosophy of mind was developed and defended by a combination of three methods used by the science of psychology. There were three methods of psychology used in the 19th century: introspection, experimental psychology,

and physiological psychology. These methods were also used in the 20th century and are still used today, together with the newer method of behaviorism. William James used all three methods to develop his theory of psychology.

The most popular method in the 19th century was introspection, or "inner seeing," which was used by Descartes and many philosophers after him. Introspection is the attempt to focus your attention on something that you are thinking about, and then to describe what you are experiencing: sights, sounds, emotions, feelings, memories, and all of the things that can be thought. Introspection allows a person to describe the activities and the contents of one's mind. The mind's processes may be watched by introspection, but some processes might not be discovered with this method. In the 18th and 19th century, philosophers of the mind were divided into two opposed positions. Empiricists believed that all the mind's processes, from the incoming sensations to the creation of higher complex ideas, could be observed by introspection. Rationalism divides the mind into two parts: the conscious mind and the unconscious mind. Rationalists believed that some of the mind's processes were hidden from introspection, and these philosophers tried to hypothesize what those processes were doing. The hidden processes must be responsible for the kinds of certain and necessary knowledge that experience could never provide. Kant attempted to combine empiricism and rationalism by holding that both incoming sensations and the mind's processes were hidden from introspection. His transcendental philosophy tried to determine what sorts of mental processes must be responsible for transforming the incoming sensations into our experiences of the world. James used introspection, and his philosophy defended empiricism and attacked rationalism.

The second method of psychology, invented in the first half of the 19th century, is experimental psychology, which requires the subject of the experiment to be able to perform introspection. Experimental psychology is also a combination of empiricism and rationalism. Experimental psychology tries to study the activities of the mind by controlling the sensations coming into a person's mind and comparing them with the results of the person's descriptions of what she experiences. The psychologist forms theories about the mind's hidden processes and then tests those theories by trying to predict what the subject will report in the experiment. Experimental psychology has a similar standpoint to Kant, because the psychologist assumes that both the incoming sensations and the mental processes that transform into experience are hidden from the subject. For example, if a red point of light is projected onto a screen in front of the subject, and the red light is turned on and off very rapidly, the subject will describe that she sees a steady unblinking light. The actual sensations caused by the quickly blinking light exist at the retina of the eye. But the information about the light is transformed during its travel

through the nervous system to the higher brain. This transformation by hidden mental processes causes the subject to experience only a steady, unblinking light. James used experimental psychology and he was sympathetic to the idea that the nervous system selectively transformed the stimuli from the senses to create our perceptual experience of the world. James was persuaded that voluntarism was correct and he believed that the human mind was also a creative transformer of perceptions into higher and more complex ideas.

The third method of psychology, invented in the middle of the 19th century, was called "physiological psychology." The psychologist could examine the bodily structure of the nervous system and take it apart to observe its connections. James was impressed by many discoveries. The brain's neurons do not store memories, because only the connections between neurons are changed by experience. Also, there is no part of the brain that appears to be centrally controlling all of the other brain activities. One of the most surprising discoveries was that the reactions of the nervous system require time to happen. This should not be surprising, since the nervous system works by sending electrical charges through the long connections of thousands of nerve cells. Physicists already understood that light and electricity require time for travel. Electricity is very fast when it travels through a metal such as copper. Electricity travels much slower through living nerve cells. A connection from your finger to your brain can require as long as a half-second to happen. Nevertheless, this discovery that nerve cells require time to communicate their electrical signals implies that all thinking requires time. Since a brain is made of nerve cells, and thought happens because the nerve cells communicate through electrical signals, all thinking consists of processes over time. James was very impressed by this discovery and he was convinced that the duration of time was essential to all mental processes, experiences, and thoughts.

Dualistic philosophers were not pleased by these discoveries, because they did not believe that the mind had anything in common with nature. James was not ready to agree that mental processes were identical with physical processes, but James did not agree with dualists either. In his first book, *The Principles of Psychology* (1890), James did not try to solve the metaphysical question of whether materialism or idealism was correct. James adopted the popular compromise called psycho-physical parallelism. Psycho-physical parallelism is a dualistic philosophy that says that if any mental process is happening in a person's mind then there must also be a parallel physical process also happening in that person's brain at the same time.

James was neither a materialist nor an epiphenomenalist, and he tried to defend the existence of free-will. Some materialistic philosophers claimed that the mental process is identical to its parallel physical process. This identity, if real, would mean that if all physical processes are predetermined to happen by exact natural laws then all mental processes are also predetermined, and

therefore free will does not exist. Epiphenomenalist philosophers instead claimed that the mental process is not identical to its parallel physical process, and that the mental process is caused by the physical process. Epiphenomenalism claims that nothing that happens in the mind could ever cause anything to happen in the physical processes of the brain. Instead, the physical processes cause the mental processes. This philosophy denies the existence of free will, since no mental idea or desire or wish could ever be responsible for anything that the nervous system does. When I reach for the cup of water, the processes of my nervous system are responsible for two things: my arm muscles moving my hand towards the cup, and my experience of feeling my hand reaching for the cup. But nothing in my mind causes my hand to reach for the cup. My mind is only a useless by-product of my brain that can never really control anything I do.

James argued for the existence of free will in many of his writings. In an early essay, the 1884 "The Dilemma of Determinism," James explains that if humans really do not have any free will, then morality cannot exist. Morality exists only if people are personally responsible for their behavior. If people do not really have free will, they could not freely choose what to do. If a person cannot freely choose what to do, that person could not be personally responsible for what is done. Also, morality exists because people sometimes regret what they did wrong. But a person does not feel regret for doing something that she could not prevent. If no one has free will, then no one could prevent what they do. If free will does not exist, no one should ever feel regret for what they do, and therefore morality would not exist.

James argued for the existence of free-will in the *Principles of Psychology* by explaining that we can introspect into our experience and notice that we do feel our control over our bodies. We feel that we are in control and that we decide what we will do. But feeling our control does not prove that we really are in control, because our feeling could give us only the illusion of being in control. James then asks the question of why we do have such feelings of decision and control. James and materialists and epiphenomenalists believed that the theory of evolution is correct. According to the theory of evolution, our abilities have evolved into existence only because they are useful for human survival. Why did our mental experiences of decision and control evolved into existence? The answer is that our mental control must actually exist so that it can be useful for human survival. Human consciousness and all our feelings, including our feeling of being in control of our actions, must actually cause our behavior.

James concluded that human consciousness cannot be identified with any sort of physical material. Our thoughts are not really material things, and they are not caused by material things. This view has led many philosophers towards accepting dualism. James does not reject dualism in the *Principles of Psychology*, but he does reject dualism in his later writings about knowledge.

James was an empiricist, believing that all knowledge is based on experience. But James was not a dualistic empiricist because dualism is a kind of skepticism about knowledge. Also, dualistic empiricism conceives of mind and matter as substances having qualities. This Aristotelian perspective on the nature of reality was adopted unquestioningly by Descartes and most subsequent philosophers. James rejected the view that consciousness is any sort of physical material, and he rejected the view that consciousness is any sort of mental material. Consciousness, according to James, was not a substantial thing but instead a process or stream of only qualities.

James's rejection of the existence of the mind as a spiritual substance was a rejection of Descartes' theory of the mind and it was also a rejection of Christianity's idea of the "soul." Most philosophers and psychologists before James's time and also during James's life were Christians who believed in the existence of the soul, and they developed their philosophies of mind in harmony with Christian doctrines about the soul. The soul was needed to explain individual personality and why our experiences were always our own and not someone else's. The soul was also needed to explain human immortality and to explain how God passes moral judgment upon each of us on Judgment Day. James believed that philosophy and psychology should be more scientific by becoming free from religious conformity. James also believed that his new theory of consciousness which did not describe the mind as a substance could explain personal individuality.

Some philosophers, especially David Hume, also had rejected the idea that the mind was a substance having qualities. But when Hume described consciousness, he talked about impressions (what we would call perceptions) and ideas that had their own independent and self-sufficient reality. A substance, by definition, is not dependent on the existence of anything else. Hume replaced Descartes' picture of the mind as a whole substance that contained thoughts with his own picture of consciousness as a collection of substantive thoughts. Hume created the school of psychology called "associationism." Associationism claimed that mental processes were only comparisons of ideas to identify facts about the relations between ideas. Ideas were like the atoms pictured in 18th century materialism. Atoms could not merge, but they could be re-arranged into new complex shapes. Mental processes could re-arrange simple ideas and build more complex ideas, and mental processes could take apart complex ideas in order to identify the component simple ideas. According to associationism, ideas could never merge together or unify in a blending of their qualities.

James did not believe that ideas or thoughts were self-sufficient and independent of each other, because our consciousness does not appear to be a collection of independent perceptions and thoughts. Kant also believed that consciousness does not appear to us to be a collection of independent ideas, but Kant attempted to explain how consciousness appears to us by postulating

a hidden "transcendental ego" that pulls the hidden "sensations" together into coherently connected experience. James complains that if no substantial sensations really exist, then there is no need to postulate any transcendental ego. Psychology should simply study actual lived human experience and postulate hidden processes only if absolutely necessary. James's *Principles of Psychology* provides many studies of actual living human experience. He attacks associationism by giving examples of how consciousness cannot be made of independent parts. He attacks Kantian transcendentalism by showing how living human consciousness contains all of the relations and connections needed to explain the important features of human experience.

Experience cannot be a series of disconnected ideas following each other through time. James agreed with Kant and other idealists that if experience was only a chain of ideas, then we would never have any sense of personal identity through time. Every idea would completely occupy the attention, and then the next would completely occupy the attention, and the first idea would be completely forgotten. And then a third idea would come along to erase the second idea. The ability to remember ideas does not help to give us personal identity, because a remembered idea would simply be a fourth idea that completely erases the third idea. A person would never be able to understand that all of these ideas were his. Kantian idealism postulates that a hidden mental process links all these ideas together so that a person can understand that all of these ideas are his. James instead argues that consciousness contains the links, because some experiences are experiences of relations between other experiences. There is no need for a hidden mind to know its thoughts, because a thought could know other thoughts using the thoughts of relations.

James's examination of experience in *The Principles of Psychology* found the five basic features of any thought.

1. A thought is always a part of just one personal stream of consciousness. No thought can be part of two streams of consciousness, and no thought can exist separately from a stream of consciousness.

2. A thought exists only for a short time. A similar thought may reappear, but it cannot be the same thought twice. There is no place in the mind where thoughts are stored.

3. A thought always has a feeling of belonging with the other thoughts in the same stream of consciousness. A thought contains a feeling of being related and connected with other thoughts in its stream.

4. A thought always seems to be about something else that is independent of the thought. No thought is simply about itself. A thought is always

pointed at something that exists beyond the immediate stream of consciousness.

5. A thought can influence the next thoughts in the stream. Thoughts are attentively focused and selective. A thought always has the feeling of effort to control what sort of thought will follow it.

The requirement that every thought can belong to only one stream of consciousness is a claim that admits that dualism is correct. In his later writings, James eliminated this requirement, suggesting that some kinds of experiences can exist in two or more streams of consciousness at the same time.

Some philosophers used the results of experimental psychology to claim that all human experiences are basically composed of simple colors, sounds, and other sensations. This claim helped to support the philosophy of associationism. James did agree that experimental psychology should show how two or more simple sensations could combine to make a complex experience. For example, hearing three tones of sound at the same time can cause a person to hear a musical chord. But when a person hears a chord, that person cannot hear the three tones distinctly. Instead, the tones combine to make a new fourth kind of tone which is called the chord. Another example is lemonade, which can be made with lemon juice, sugar, and water. When a person tastes lemonade, the person does not taste water and sugar and lemon juice. The three ingredients blend together to produce a new fourth taste of lemonade. People do not experience the sensational parts of an experience because they only can experience the unified combination. James argues that the psychologist's ability to discriminate the sensational parts that cause a complex thought by using the methods of experimental psychology is not an ability of the person actually having the complex thought. A philosopher who claims that all thoughts are made of simple sensations commits a logical fallacy that James calls "the psychologist's fallacy." Experience is always of unified wholes, not parts. Hume's argument that we cannot experience the relations between ideas commits the psychologist's fallacy.

Experience is also actively goal-directed. Our thoughts are aimed at controlling our behavior, and so all thoughts are directly or indirectly involved in deciding how to act. Human experience is not only a process, but it is also creative. The ability of thoughts to control actions, and the ability of thoughts to incorporate aspects of previous thoughts without being completely predetermined by them, provides human beings with free will. James's psychology supports his pragmatism. Even though James did not announce that he was a pragmatist with his friend Charles Peirce until 1898, the *Principles of Psychology* clearly states that thoughts must serve the activities of the human being.

Pragmatic Empiricism and the Will to Believe

Experience as a whole, according to James, is only partially unified. Because we do not have only one thought at a time, but many thoughts happening together, our thoughts can lead us towards many actions at the same time. We can control our actions, so that we can accomplish one action before trying to accomplish another, but this is an ability of self-control that must be learned. Children do not have much control of their thoughts, causing them to be unable to complete complex tasks. Adults sometimes have difficulty organizing their thoughts so that organized actions happen in the correct way. James's theory of the stream of consciousness can explain why we have conflicting thoughts and competing motivations for different actions. Human rationality for James is essentially the struggle for practical control over these diverse and divergent currents in thought.

James is a voluntarist and therefore does not agree that evidence is simply all of the perceptions that are passively received by the sense from the natural world. Evidence for a hypothesis must be relevant to the hypothesis, which means that evidence must be selectively chosen from all of the objects and events in experience. Also, the evidence needed to support hypotheses must be created under experimentally controlled conditions. A hypothesis must predict what would happen under specified experimental conditions. Because evidence, both scientific and religious, must be predicted and selectively created, philosophers cannot claim that evidence has nothing to do with human activity. Human activity establishes evidence, and people would not try to establish evidence for a hypothesis unless they believed that the hypothesis might be true. Other philosophers have argued that a scientist must never believe a hypothesis at all until sufficient evidence is collected to support it. But James argues that this skeptical attitude would prevent many kinds of hypotheses from ever being tested and found to be correct. Both science and religion require that some small amount of belief is necessary so that truths can be learned by investigators. This is a shared foundation for both science and religion.

In "The Will to Believe" James uses the fact that the evidence confirming a hypothesis can only be created by some degree of belief to make his argument that religious beliefs should be tested by their consequences. People should be free to develop their religious beliefs and test them in their own lives. If people have the freedom to use religion to improve their own lives and the lives of others, then they have an opportunity to determine the truth of religion and to find greater happiness. If we instead follow those philosophers who demand sufficient evidence, we may avoid believing falsehoods, but we lose the opportunity to learn new truths and gain new happiness. While people cannot simply "decide" to confidently believe in a religious doctrine, people must start from some small commitment to the religion's possible truth. In return, the religious belief must make some differences to person's

lives. These differences will either support the religious commitment and make religious belief stronger, or these differences may cause a person to reject the religion completely. Fortunately, there are many kinds of religions that can be tested, so no one should be limited to trying only one religion.

It is very important for people to have the freedom to develop religious beliefs. James also argues in "The Will to Believe" that it is very important that people use this freedom to choose to become religious. James distinguishes between momentous and trivial options. Most choices we have are trivial because however we chose, the results of a trivial choice will never make any significant and permanent change to the value of our lives. A few choices are momentous because they are unique opportunities to make a permanent and important change to the value of our lives. Each person has the momentous opportunity to try to become religious; or, if a person is already religious then that person has the momentous opportunity to adopt a different religion. The choice between scientific hypotheses is never momentous, but the choice between becoming religious and remaining an atheist is always momentous. Some philosophers think that people should delay making any religious decision until sufficient evidence for God has been collected. These philosophers use the scientific method as their model for rationality, and according to the scientific method, it is rational to withhold belief in a hypothesis until sufficient evidence is gathered. But James argues that if we wait for scientific evidence for God, we will wait forever.

Scientific evidence is not relevant to the religious choice. Unlike the scientific method, which deals with only trivial choices, the religious method deals with momentous choices. If we do not decide to become religious, we are irrational, because we would lose a unique opportunity to improve the value of our lives. The nature of religious evidence must be very different from the nature of scientific evidence. James argues that for both science and religion, the origins of a hypothesis must be ignored when the hypothesis is tested by the evidence. Hypotheses may come in sleeping dreams or arrive in daydreams of imagination, but what matters to rationality is how hypotheses are empirically testable. Along with Charles Peirce, William James was one of the first philosophers to sharply distinguish what later 20th century philosophers have called "The Logic of Discovery" from "The Logic of Justification." Pragmatism is a transformed empiricism which focuses on the logic of justification. The accumulation of past experience causes inquirers to postulate hypotheses, but what justifies acceptance of an hypothesis is its ability to correctly predict future experiences.

Radical Empiricism, Pragmatism, and the Meaning of Truth

In *The Principles of Psychology* and in his writings on belief and religion from 1890 to 1903, James developed a pragmatic philosophy that was closely

related to his theory of the stream of consciousness. After 1903 James explicitly separated these two theories. The most important writings are "Does 'Consciousness' Exist?" and "A World of Pure Experience," both published in 1904. He declared that his theory of experience, which he called "radical empiricism," does not depend on the truth of pragmatism. James understood that there could be many kinds of pragmatism, including the pragmatisms developed by his friends Peirce, John Dewey, and F. C. S. Schiller. James did develop his own kind of pragmatism which continued to be closely related and dependent on his radical empiricism. James understood that there is a problem for his pragmatism, because pragmatism could be interpreted to be saying that each person has his own truth, because each person has only his own experience. The idea that each person has his own truth is called "subjectivism." Personal idealism also suffers from this problem of subjectivism. James wanted to treat truth as objective, because truth is about the relationship between a mental idea and something independently existing beyond the mental idea.

Dualism solves this problem by proposing a physical world beyond experience, but James rejected dualism. A dualistic theory of knowledge claims that true mental ideas are those which accurately represent the real features of physical reality. Dualism leads towards skepticism because dualism cannot identify which of our ideas are accurate representations. Dualism proposes that when a person knows that she sees the moon, she only sees a mental copy of the moon. No one can directly see a physical object, if dualism is correct, because everything that we see is only an idea in our own mind. However, when we see an object, we do not notice any ideas and we believe that we see only the physical object.

Absolute idealism, such as the philosophy of James's friend and Harvard colleague Josiah Royce, proposed to solve the subjectivism problem by describing everything real as mental and all human experience as a dependent part of the absolute (God) mind. The existence of God guarantees the objectivity of truth. James rejected absolute idealism because the dependence of human experience on God reduces human freedom and moral responsibility. Royce's absolute idealism is a kind of theism, and James could not accept any theism. Although there are many pragmatic themes in Royce's understanding of the human mind, his absolute idealism argues that there must be a transcendental self which guarantees the existence of one independent and objective world that is the same for all people.

All three philosophies, personal idealism, dualism, and absolute idealism, assume that consciousness is a particular kind of thing and that knowledge is a relation between consciousness and some other kind of thing. James instead believes that when the object is perceived, there is no relation between two things because the knower and the known are the same experience. James refers to perception as "knowledge by acquaintance" and states that

this kind of knowledge does not happen because something in consciousness has correctly represented something that is not in consciousness. Knowledge by acquaintance happens because the thing perceived is a part of the stream of consciousness. In "Does 'Consciousness' Exist" James claims that if "consciousness" refers to a substantial mind that contains representations of objects, this kind of consciousness does not exist. The only kind of consciousness is the stream of consciousness which contains perceived objects. James emphasizes the fact that experience is not contained within a substantial mind by stating that all experience is "pure" experience because it is essentially neither mental or physical. There is no need for a substantial mind to hold together the experiences because experiences are connected by relations within experience itself.

James's philosophy of radical empiricism claims that all of reality is made of various kinds of experience. This philosophy is pluralistic, because James does not claim that reality is made of one single kind of material called "experience" that can have many forms and varieties. Instead, James claims that an uncountable number of very different kinds of things exist, and they all have only one thing in common: they can be part of a stream of consciousness.

Critics of radical empiricism complained that James was designing a kind of solipsism. If philosophy can only debate experience, and if the only experience that anyone has is the experience within one's own stream of consciousness, then the world can only consist of the contents of that stream of consciousness. Is there really any world beyond one's own stream of consciousness? Critics wanted James to answer this question: does a perceived object continue to exist after a person has turned his vision in a different direction and when it is no longer any person's stream of experience? Personal idealism's answer is negative. Dualism's answer is negative, if by "perceived object" one means the idea of the object, while if "perceived object" means the physical object, then the answer is instead affirmative. Absolute idealism's answer is affirmative, since the perceived object would still be perceived by God. James wanted to answer this question affirmatively. But he also wanted to argue that when a person perceives an object, the object itself is perceived and not merely a mental copy of the object. He also wanted to believe that it is possible for two people to perceive the same object at the same time.

The only way to satisfy all of these affirmative answers is to declare that it is possible for a perceived object to join one or more streams of experience without becoming dependent on any of those streams of experience for its existence. The relations between a perceived object and the rest of a stream of experience are within the stream of experience, so that the relationship itself is experienced. But the relation between a perceived object and a stream of experience is not a necessary relation but instead a contingent relation. The perceived object does not always have to be a part of a stream of experience,

but it is possible for it to occasionally join a stream of experience. Furthermore, we can only conceive of the perceived object as experienceable, because we do not know how to conceive of the object in any other way. If we remove from our conception of an object all of its features that it has in experience, there would be nothing left of the object to think about. Therefore, we must conceive the object as continuing to be a set of related experiences even when it is not part of any other stream of experience.

This statement of the contingent relationship between the perceived object and a stream of consciousness is the conclusion of his radical empiricism. It permits James to redefine the meanings of "mental" and "physical" by using revised ideas of the "objective" and "subjective." The physical object is a pattern of experiences considered as having its own existence independent of its relations with my own stream of consciousness, even though these two series of experiences can merge during my perception of the physical object. During the merging of perception, I can call the object mental also if I consider how the object is a part of my stream of consciousness. An experience can be both physical and mental at the same time, depending on which set of the experience's relations are selected for consideration. Dualists believe that a perception always has two parts: the experience of the object, and the object that is perceived. James denies that experience has such an "inner duplicity."

In perception, or what James calls "knowledge by acquaintance," the object perceived is identical with the perception of the object. If we ignore the perception's relations with other surrounding experiences, we have only "pure" experience. Usually we do not ignore the surrounding relations and we classify experiences as mental and physical automatically. Philosophers can use introspection to understand how to reveal and question our assumptions about ourselves and the world.

The philosophy of radical empiricism is compatible with, and supports, James's version of pragmatism. Two basic principles were used to construct James's pragmatism. First, a thought or idea always leads towards some further and future thoughts in experience. Thoughts are not passive and disconnected from each other. Thoughts are active and creative, because they stimulate additional experiences which grow from them. Second, thoughts are meaningful only because they are always about some other experience and can help bring about that other experience by motivating us to act. James recognizes that many thoughts never directly result in any active exploration of the world. Some thoughts are merely imaginative speculations that no one would claim are true. These speculations are pragmatically meaningless because they have nothing to do with human action. Meaningful thoughts do produce experiences through human activity.

When we have an opportunity to learn from other people and compare our thoughts about the world, we can together experiment with thoughts to see

whether they do produce their intended consequences. His theory of truth, explained in the next section, explains how we can evaluate ideas by testing their intended consequences. Ideas can only be evaluated for truth if they do have practical consequences, and two different ideas can be compared if their practical consequences are different. James agrees with Peirce that the pragmatic method of evaluating ideas by their practical consequences is the essence of the scientific method.

James sometimes describes his approach to truth as a much-needed clarification of the classical "correspondence" theory of truth. The correspondence theory of truth has two meanings, an ordinary meaning and a philosophical meaning. In ordinary language, a person knows the truth when that person can describe an event exactly as it really happened. If a person has "knowledge by acquaintance" with an event, then that person could know the truth. A person does not know the truth if he cannot describe an event exactly as it really happened. Many events take place even though no one observed them. If an unobserved event takes place, there is no truth to be told about that event because no one can describe exactly what happened. We might guess what actually happened later, and some people are very good at determining what probably happened (such as police detectives). But unless someone could prove that he actually witnessed the event, such as a crime, no one could have the truth. James's theory of truth is designed to agree with this ordinary understanding of "truth." James speaks of a person's meaningful idea as capable of "leading" one towards its object. A witness in possession of some true ideas about the witnessed event ought to be able to return to the scene of the crime and recognize its main features.

The correspondence theory of truth according to philosophers is more complex. According to the philosophical theory of truth, any event, whether it is actually observed or not, could be known as a truth. Suppose the unobserved event is a tree falling down after being struck by lightning. If I observe the lightning bolt from a mile away, I can see that the lightning bolt has struck somewhere in a forest. But I am too far away to see individual trees and I did not see any tree fall down. Now suppose I then think the thought, "A tree fell down after being hit by that lightning bolt." According to the ordinary meaning of "truth," I do not know a truth about any tree. I have only made a guess. But a tree really did fall down. According to the philosophical theory of truth, my thought is a truth. My thought is a truth because it does state the real events. My thought is "A tree fell down after being hit by that lightning bolt," and the actual event in the forest a mile away was a tree falling down after being hit by that lightning bolt. There is a correspondence between my thought and the actual event far away, and that is enough to make my thought true.

According to the ordinary meaning of truth, I cannot have a true thought if I cannot prove that my thought is actually correct. But according to the

philosophical correspondence theory of truth, my thought is true regardless of whether I ever do prove it to be correct. If I never walk out into the forest, never find a fallen tree, and never observe the fire burns on the tree, I still have a true thought. James rejects this philosophical theory of correspondence. According to James's pragmatic theory of truth, I cannot have a true belief unless I could successfully prove my belief to be correct. Only that verifying capacity establishes any connection of reference between an idea and its object. For the philosophical correspondence theory of truth, somehow a person's idea could "really" successfully refer to some external object, even if the person had no understanding that this object exists, and had no grasp that his idea was referring to it. James, like other pragmatists, found this notion of reference completely mysterious and contrary to a scientific understanding of the mind.

The modern philosophical theory of correspondence was developed primarily by metaphysical dualists who believed that all of our ideas were inside our minds. Since we could never compare our ideas with the physical world, because the physical world could never be experienced in any way, metaphysical dualists decided that truth did not require proof in actual experience. According to dualism, if an idea does copy reality, then that idea is true, and it does not matter if I can never prove that my idea actually does copy reality. Metaphysical dualism always leads towards skepticism, because skepticism is the view that we can never discover whether any of our ideas are true knowledge. James's pragmatism is designed to prevent skepticism, which is a familiar task for empiricisms.

Another problem for the philosophical correspondence theory of truth was that modern science no longer attempts to establish "pictures" of the world. Simple pictures of objects in perception can be captured and remembered by images in the imagination, which Locke and Hume called "ideas." But complex scientific theories do not try to form copying images of the world. Modern science attempts to discover the laws of natural processes, like gravity. Natural processes are not "facts" that can be stated as relations between observed qualities. We cannot see most natural processes, and we do not know how to picture them. There are so many natural processes, and so many different ways to describe their operations, that there can no longer be any expectation that we will soon make our theories consistent with each other and perfectly true. The criteria for knowledge of natural processes must be something other than correspondence. James offered the criteria of "satisfactory working." The true idea is what satisfactorily works. Since there are varying degrees of working, there can be many degrees of truth. There are also many different kinds of working, depending on the sort of idea or theory involved. All satisfactory workings of ideas requires some sort of active human experience.

James, unlike Peirce, does not have a sophisticated philosophy of science to offer. His examples in his writings which illustrate his definition of truth are typically simple examples of ordinary life and not laboratory experi-

ments. The advantage of using James's definition of truth, however general, is that it covers both ordinary life and laboratory experiments. Because pragmatically meaningful ideas, thoughts, and theories must lead towards some practical consequences, the testing of their truth is just the testing of their value for actually leading towards their intended goals.

Knowledge by acquaintance is the most fundamental kind of knowledge, but it is also, by itself, not very useful. People cannot always be focused on the immediate present. In order to achieve our future goals we must have ideas which suggest how to get from where we are now to where we want to be. These ideas must instruct us how to perform a series of actions which will result in a practical experience. These ideas attempt to represent the final stage of the process where the practical consequences are.

James describes this second kind of knowledge as knowledge by representation. Representational knowledge requires that an idea directs the stream of consciousness through a series of connected experiences of the natural world that arrive at a perception (a knowing by acquaintance) of the intended thing. If all knowledge were knowledge by acquaintance, then the problem of solipsism could arise. But our ability to have knowledge by representation requires that a natural world of experienceable things must always surround us. James constantly stated that a thought must point beyond itself to something that exists independently of it. He also points out that early in life babies discover that objects continue to exist even while they are not observed. For the rest of our lives, we believe that "reality" is what is permanent and not within our control while our perceptions are changing under our control.

James sometimes called his theory of truth an "epistemological dualism." Epistemological dualism states that an idea is true only because it is about some other independent existence. All metaphysical dualists are also epistemological dualists, but some epistemological dualists could instead be empiricists, such as James. When we have knowledge by acquaintance, we have something in our experience which does not depend on that experience for its existence. When we have knowledge by representation, we are led towards something that exists independently of our experience even though it can come into experience. The metaphysical dualist claims that we can never experience nature. James claims that we can experience nature, and that is the only way for us to ever have any knowledge and truth.

Many critics attacked James's theory of truth by accusing his theory of declaring that the truth is only whatever anyone wants to believe. These critics instead say that that the truth does not depend on what we believe. This accusation is false, because when we test some idea that we want to believe, the test may not succeed and then we must admit that the belief is false. James does say that a true idea is one which is believed and survives testing.

Other critics attacked James's theory of truth by accusing his theory of declaring that truth is only what each individual person believes is true.

These critics instead say that the truth is what all people must together believe is true. This accusation is false, because most of our beliefs are shared by others. We should test our shared beliefs together, and agree that the true beliefs are those which successfully work as intended. James does say that some true ideas are only believed by single individuals. Each person has many beliefs that other people do not care about at all.

Some philosophers have attacked James's theory of truth because it would not allow truths about things too small to be observed or things completely hidden from observation, such as forces of nature. James does not say that theories about hidden things are meaningless. Theories must have practical consequences for human experience. A theoretical model of the parts of an atom can never lead a scientist through nature towards an individual atom so that she can have a knowing by acquaintance of an electron. However, the model of the atom can lead a scientist to a design of an experiment to test whether the observable effects of electrons actually do happen as predicted by the theory. A pragmatically meaningful theory must make predictions about what would be observed.

Many of the philosophers who criticized James's theory of truth did not believe that James really had a theory of truth because truth must be absolute. These philosophers declared that if a belief could possibly be revised by future discoveries, then it could not be true. A truth must be absolutely true, which means that it could never be revised. Peirce did define truth in this way, and was concerned by James's use of the word truth is a different sense. James did agree with Peirce that an absolutely true belief is a belief which could never be revised by further investigation and experiment. James also wanted to talk about kinds of truths which were less than perfect. Nearly all of human knowledge is less than perfect. Our knowledge is not completely false, either. James's epistemological position, like that of all pragmatists, is instead fallibilism. Knowledge is always potentially revisable. While knowledge settles doubt, reaching a resolution of doubt is not the same psychological state as achieving an enduring certainty. Pragmatism has no place in its epistemology for permanent a priori certainties. We should understand that there are degrees of knowledge and truth, and that any knowledge we now possess could fail to work in the future.

The pragmatic theory of truth portrays knowledge as relative to a context of purposes. For example, a surveyor of land knows how to measure the dimensions of a section of land and determine how much area is enclosed by the property lines of that piece of land. Surveying knowledge allows people to make very accurate maps of neighborhoods and towns and cities. However, surveying knowledge only works for small areas of land, because the methods of surveying assume that the land is mostly flat. The mathematics used by surveying is Euclidean geometry, which works only for flat areas of space. If a map-maker wants to measure the land area of an entire country, he cannot

use only surveying knowledge. Because the earth is a sphere, the land does not obey Euclidean geometry but instead spherical geometry. There is a different kind of knowledge of mapping large areas of land. Today we can use satellite surveying. Surveying knowledge is not shown to be false because it cannot be used to accurately measure large areas of land. Surveying knowledge does not attempt to make large measurements, and satellite surveying does not attempt to make small measurements. Both methods of knowledge are true for their own separate purposes because they work for their separate purposes.

James's theory of truth does portray human knowledge as very selective because we only test those beliefs that are needed for human activities. The description of the scientist as completely impartial, neutral and lacking desires is quite inaccurate. It is true that scientists should not corrupt experiments in order to guarantee that the predicted results will happen. However, James explains that scientific theories are created only because people have practical problems to be solved. Scientific knowledge develops only in those directions which are viewed as important by scientists. Sometimes scientists ignore an area of possible research because they have no interests in that field. In America, it has been discovered that many drugs have been developed for typically male health problems, while fewer drugs have been developed for health problems suffered only by women. The best explanation is that until recently most medicine scientists have been men. If a society wants its scientists to explore a new area of research, it should control the funding of scientific research in that direction. James understood that science should be supervised by a society trying to promote equality and justice.

Personalism, Pluralism, and Panpsychism

Throughout his career, William James defended a personalistic philosophy. Personalism is a name for a philosophy which tries to understand all reality primarily through concepts significant in personal experience. Personalism is opposed to other impersonalist philosophies which try to conceive of reality using only abstract concepts that are not part of personal experience. Some impersonalisms are "logicist" philosophies that use pure logic or mathematics to define reality. Other impersonalisms are "materialist" philosophies that only use abstract scientific terms, such as energy or mass, to define what reality is. James's personalism rejects logicism and materialism. His doctrine of radical empiricism demands that reality be conceived in terms of only the contents of human experience. Personalism does not require the belief that nothing beyond human experience exists. James says that if it is pragmatically necessary to believe in realities beyond human experience (and James does believe that some of these entities, such as God, are pragmatically useful), then philosophy should conceive of these entities only using concepts taken from actual human experience. A major task of any personalistic

philosophy is to explain how philosophy should conceive of physical objects.

In his writings from 1904 to 1905, James attempted to explain the difference between physical and mental objects by postulating his principle of "pure experience." All things in experience are neither essentially physical nor mental, because they are "pure" experience when they are considered by themselves. While all real things are pure experience, real things can at one time function as mental things and at other times they can function as physical things. A "physical" object must have two abilities. It has the ability to join in relations with the other ideas of a stream of consciousness. It also has the ability to continue to exist as experience even while it is not a part of any person's stream of consciousness. James declares that such physical objects really exist. A "mental" object can only exist while it is part of a stream of consciousness. The principle of radical empiricism states that thoughts have only contingent relations to other thoughts. Therefore, there is no thought which must always belong to a stream of consciousness. There are no thoughts which must always be mental. We can distinguish between physical and mental experiences only by observing the series of contingent relations that experiences have with other experiences.

If I stand in the center of a room that has a picture hanging on each wall and slowly turn around so that I see each wall in succession, everything that I see is an experience. All four pictures will be in my stream of consciousness. If I consider only the relations that the four pictures have with each other as following each other in my stream of experience, then the pictures are mental. I can say, "I saw the first picture, then the second picture, then the third picture, and then the fourth picture." If I consider only the relations that one of pictures has with the other objects in the room, then that picture is physical. I can say, "The picture was hanging on the east wall of the room for the entire time that I was looking around at the walls, and for a brief time the picture was also in my experience." The brief experience of the picture is a pure experience because by itself, it is neither mental nor physical. Its nature is defined by the sequence of events in which it participates. In my example, it participated in two different sequences of events at the same time, and these sequences briefly merged at the moment that I was looking at the picture.

James was not satisfied with this principle of pure experience. From 1906 to his death in 1910, James's doctrine of radical empiricism sometimes supported a different view called panpsychism. The primary reasons for dissatisfaction with the theory of pure experience are (1) what is the nature of the physical object while it is not being experienced, and (2) how can two people experience the same object at the same time? The first question must be answered by radical empiricism by saying that the object is not a physical object, and it is not a mental object either, when it is not in any stream of experience. But the object must still be an experience, since everything must be conceived as an experience according to James. But who experiences the

object? James was often tempted to say that the object can experience itself. James did argue in his *Principles of Psychology* and later writings that there is no need to postulate a mind that knows its own experiences, because each experience in the stream of thought simply experiences itself all by itself. Therefore, if our own experiences can be experiences for themselves, then any object can be an experience for itself. James was willing, in his later writings, to suggest the philosophy of panpsychism: that all existing things are experiences for themselves as well as possible experiences for others.

James was also attracted to panpsychism because it could solve his problem of explaining how two people could experience the same object at the same time. His doctrine of the stream of consciousness, as presented in his *Psychology*, emphasized that a thought had to be a completely unified thing without parts or internal relations. A thought could have external relations with other thoughts, and it is possible for an experience to be externally related to two different streams of consciousness. But no thought could have "perspectives" that present one quality when observed from one direction, and from another perspective appear to have a different quality. Let this doctrine be called the "unique quality" doctrine. Between 1904 and 1908 James realized that an experience, if conceived according to this "unique quality" doctrine, could not be the same for two different people. Suppose than an object O is experienced by a stream of consciousness for person A, and O is also experienced by a stream of consciousness for person B. If O is in A's stream of consciousness, than means that the experience of O must be O in its relation to the next thoughts in A's stream. The same is true for B. If O is in B's stream of consciousness, than means that the experience of O must be O in its relation to the next thoughts in B's stream. The object O must have two different qualities: its relations to A's stream, and its relations to B's stream. However, according to the "unique quality" doctrine of thoughts presented in his *Psychology*, no object in experience can have two different qualities depending on its relations to other things.

James realized that the "unique quality" doctrine was a false doctrine because it requires that an object be conceived as static, unchanging, and timeless. It is true that you cannot look at an object and see two of its perspectives at the same time. If you are standing in front of a building, you cannot see both the front of the building and the back of the building at the same time. But we know that a building has both a front and a back side. Perhaps thoughts and experiences have perspectives too. James rejected associationism because it portrayed thoughts as unchanging, unrelated, and made of simple parts. James corrected associationism when he declared that thoughts can be related by other thoughts, but he argued that thoughts must have a unique and static quality.

By 1907 James realized that this was a mistake. He realized that only "intellectualist logic" requires that any object that can be identified must have

a unique and static quality. When James had attempted to identify individual thoughts in the *Psychology*, he used intellectualist logic to specify particular thoughts. That is why he described the stream of consciousness as a chain of a series of consecutive thoughts. The only difference between his view and associationism is that James found that some of the thoughts in the stream were relations, while associationism declared that it was impossible to experience relations. By 1907 James was ready to stop using intellectualist logic to describe consciousness. Instead of requiring that each thought be a separate, static existence, James described thoughts as having overlapping and merging parts. Only after 1907 did James portray consciousness as a genuine stream of flowing and merging thoughts. While the intellectual discrimination of specific thoughts can be made, James argued that this discrimination does not accurately capture the actual flow of lived experience. When we use concepts to identify thoughts as this specific thought or that other specific thought, we are breaking up and stopping the stream of thought to create something that was not really there in pure experience.

If consciousness is truly a stream, then any part of the stream is always merged with any next part. We might notice the waves of the stream, but the waves have no fixed unchanging boundaries and are always connected to other waves near them. Experiences are just like waves of water in the stream, and all experiences are continually merging with other experiences.

This new conception of experiences as always changing and having merged parts with other experiences solves James's problem of explaining how one object can be observed by two different people at the same time. The object must be a complex experience for itself, capable of merging with multiple streams of consciousness at the same time. Any real thing must be an object of experience that could merge with other experiences, including the experiences of people. James did not explain thoroughly this theory of panpsychism, although later philosophers such as Alfred North Whitehead built upon James's writings.

James did clearly explain his view of metaphysical pluralism in two later books, *A Pluralistic Universe* and *Some Problems of Philosophy*. The philosophy of monism, which includes absolute idealism, declares that all things are fundamentally one sort of thing and that all things must be connected in some way. James explains that monism can be defended only by an intellectualist logic. If it is said that two different things are related to each other in some way, then the relation between them is always conceived statically as some third thing. How can A be related to C through the relation of B? A must be somehow related to B first. But if A is related to B, then there must be the relation D, and so on. An infinite number of relations are required, which is absurd. Therefore, the original supposition that A is related to B must be false, and therefore A and B cannot really be two separate things. In *Some Problems of Philosophy* James protests against monism on four

grounds: monism cannot explain why we each experience only our own finite minds, monism supports theism and all of theism's problems, monism contradicts the way that we actually do experience the world, and monism supports determinism and a denial that free will exists. Pluralism declares that the universe is not fundamentally one thing but is instead a plurality of an infinite number of different kinds of things that can interact and merge and separate again.

Pluralism states that the relations between existing things are contingent and temporary. Pluralism also is compatible with the doctrine of tychism, which James learned from Peirce. According to James's tychistic pluralism, new existences can spontaneously come into existence without being caused to exist by any prior existence. This tychistic pluralism permits the existence of free will and can accurately describe the way that we experience our own minds and the world around us. Tychistic pluralism resolves the problem of evil by explaining that evil really does exist, but goodness might defeat evil through human efforts. Tychistic pluralism is therefore used by James to support his moral philosophy of meliorism.

Furthermore, when tychistic pluralism was combined by James with panpsychism in his last writings, James found a way to support his religious views. James believed that it is possible for the spirit of God to merge with human minds. James argued that if his pluralistic panpsychism is correct, this merger with God is possible. In both *A Pluralistic Universe* and *Some Problems of Philosophy* James offered a metaphysical vision of human consciousness as an organic part of the much larger consciousness of God. James sometimes referred to reality as an "unfinished universe" of open possibilities. James's philosophy is the philosophy of adventure with the unknown, struggle with evil, and possible rewards for a person's loyalty to ideals.

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Section One

Writings by William James

REMARKS ON SPENCER'S DEFINITION OF MIND AS CORRESPONDENCE

William James, "Remarks on Spencer's Definition of Mind as Correspondence." *Journal of Speculative Philosophy* 12.1 (January 1878): 1–18.

As a rule it may be said that, at a time when readers are so overwhelmed with work as they are at the present day, all purely critical and destructive writing ought to be reprobated. The half-gods generally refuse to go, in spite of the ablest criticism, until the gods actually *have* arrived; but then, too, criticism is hardly needed. But there are cases in which every rule may be broken. "What!" exclaimed Voltaire, when accused of offering no substitute for the Christianity he attacked, "*je vous délivre d'une bête féroce, et vous me demandez par quoi je la remplace*!" Without comparing Mr. Spencer's definition of Mind either to Christianity or to a "*bête féroce*," it may certainly be said to be very far-reaching in its consequences, and, according to certain standards, noxious; whilst probably a large proportion of those hard-headed readers who subscribe to the *Popular Science Monthly* and *Nature*, and whose sole philosopher Mr. Spencer is, are fascinated by it without being in the least aware what its consequences are.

The defects of the formula are so glaring that I am surprised it should not long ago have been critically overhauled. The reader will readily recollect what it is. In part III of his *Principles of Psychology*, Mr. Spencer, starting from the supposition that the most essential truth concerning mental evolution will be that which allies it to the evolution nearest akin to it, namely, that of Life, finds that the formula "*adjustment of inner to outer relations*," which was the definition of life, comprehends also "the entire process of mental evolution." In a series of chapters of great apparent thoroughness and minuteness he shows how all the different grades of mental perfection are expressed by the degree of extension of this adjustment, or, as he here calls it, "correspondence," in space, time, speciality, generality, and integration. The polyp's tentacles contract only to immediately present stimuli, and to almost all alike. The mammal will store up food for a day, or even for a season; the bird will start on its migration for a goal hundreds of miles away; the savage will sharpen his arrows to hunt next year's game; while the astronomer will proceed, equipped with all his instruments, to a point thousands of miles

distant, there to watch, at a fixed day, hour, and minute, a transit of Venus or an eclipse of the Sun.

The picture drawn is so vast and simple, it includes such a multitude of details in its monotonous frame-work, that it is no wonder that readers of a passive turn of mind are, usually, more impressed by it than by any portion of the book. But on the slightest scrutiny its solidity begins to disappear. In the first place, one asks, what right has one, in a formula embracing professedly the "entire process of mental evolution," to mention only phenomena of cognition, and to omit all sentiments, all esthetic impulses, all religious emotions and personal affections? The ascertainment of outward fact constitutes only one species of mental activity. The genus contains, in addition to purely cognitive judgments, or judgments of the actual – judgments that things do, as a matter of fact, exist so or so – an immense number of emotional judgments: judgments of the ideal, judgments that things *should* exist thus and not so. How much of our mental life is occupied with this matter of a better or a worse? How much of it involves preferences or repugnances on our part? We cannot laugh at a joke, we cannot go to one theater rather than another, take more trouble for the sake of our own child than our neighbor's; we cannot long for vacation, show our best manners to a foreigner, or pay our pew rent, without involving in the premises of our action some element which has nothing whatever to do with simply cognizing the actual, but which, out of alternative possible actuals, selects one and cognizes that as the ideal. In a word, "Mind," as we actually find it, contains all sorts of laws – those of logic, of fancy, of wit, of taste, decorum, beauty, morals, and so forth, as well as of perception of fact. Common sense estimates mental excellence by a combination of all these standards, and yet how few of them correspond to anything that actually *is* – they are laws of the Ideal, dictated by subjective *interests* pure and simple. Thus the greater part of Mind, quantitatively considered, refuses to have anything to do with Mr. Spencer's definition. It is quite true that these ideal judgments are treated by him with great ingenuity and felicity at the close of his work – indeed, his treatment of them there seems to me to be its most admirable portion. But they are there handled as separate items having no connection with that extension of the "correspondence" which is maintained elsewhere to be the all-sufficing law of mental growth.

Most readers would dislike to admit without coercion that a law was adequate which obliged them to erase from literature (if by literature were meant anything worthy of the title of "mental product") all works except treatises on natural science, history, and statistics. Let us examine the reason that Mr. Spencer appears to consider coercive.

It is this: That, since every process grows more and more complicated as it develops, more swarmed over by incidental and derivative conditions which disguise and adulterate its original simplicity, the only way to discover its true and essential form is to trace it back to its earliest beginning. There it will

appear in its genuine character pure and undefiled. Religious, esthetic, and ethical judgments, having grown up in the course of evolution, by means that we can very plausibly divine, of course may be stripped off from the main stem of intelligence and leave that undisturbed. With a similar intent Mr. Tylor says: "Whatever throws light on the origin of a conception throws light on its validity." Thus, then, there is no resource but to appeal to the polyp, or whatever shows us the form of evolution just *before* intelligence, and what that, and only what that, contains will be the root and heart of the matter.

But no sooner is the reason for the law thus enunciated than many objections occur to the reader. In the first place, the general principle seems to lead to absurd conclusions. If the embryologic line of appeal can alone teach us the genuine essences of things, if the polyp is to dictate our law of mind to us because he came first, where are we to stop? He must himself be treated in the same way. Back of him lay the not-yet-polyp, and, back of all, the universal mother, fire-mist. To seek there for the reality, of course would reduce all thinking to nonentity, and, although Mr. Spencer would probably not regard this conclusion as a *reductio ad absurdum* of his principle, since it would only be another path to his theory of the Unknowable, less systematic thinkers may hesitate. But, waiving for the moment the question of principle, let us admit that relatively to *our* thought, at any rate, the polyp's thought is pure and undefiled. Does the study of the polyp lead us distinctly to Mr. Spencer's formula of correspondence? To begin with, if that formula be meant to include disinterested scientific curiosity, or "correspondence" in the sense of cognition, with no ulterior selfish end, the polyp gives it no countenance whatever. He is as innocent of scientific as of moral and aesthetic enthusiasm; he is the most narrowly teleological of organisms; reacting, so far as he reacts at all, only for self-preservation.

This leads us to ask what Mr. Spencer exactly means by the word correspondence. Without explanation, the word is wholly indeterminate. Everything corresponds in some way with everything else that co-exists in the same world with it. But, as the formula of correspondence was originally derived from biology, we shall possibly find in our author's treatise on that science an exact definition of what he means by it. On seeking there, we find nowhere a definition, but numbers of synonyms. The inner relations are "adjusted," "conformed," "fitted," "related," to the outer. They must "meet" or "balance" them. There must be "concord" or "harmony" between them. Or, again, the organism must "counteract" the changes in the environment. But these words, too, are wholly indeterminate. The fox is most beautifully "adjusted" to the hounds and huntsmen who pursue him; the limestone "meets" molecule by molecule the acid which corrodes it; the man is exquisitely "conformed" to the *trichina* which invades him, or to the typhus poison which consumes him; and the forests "harmonize" incomparably with the fires that lay them low. Clearly, a further specification is required; and,

although Mr. Spencer shrinks strangely from enunciating this specification, he everywhere works his formula so as to imply it in the clearest manner.

Influence on physical well-being or survival is his implied criterion of the rank of mental action. The moth which flies into the candle, instead of away from it, "fails," in Spencer's words (vol. I, p. 409), to "correspond" with its environment; but clearly, in this sense, pure cognitive inference of the existence of heat after a perception of light would not suffice to constitute correspondence; while a moth which, on feeling the light, should merely vaguely fear to approach it, but have no proper image of the heat, would "correspond." So that the Spencerian formula, to mean anything definite at all, must, at least, be re-written as follows: "Right or intelligent mental action consists in the establishment, corresponding to outward relations, of such inward relations and reactions as will favor the survival of the thinker, or, at least, his physical well being."

Such a definition as this is precise, but at the same time it is frankly teleological. It explicitly postulates a distinction between mental action pure and simple, and *right* mental action; and, furthermore, it proposes, as criteria of this latter, certain ideal ends – those of physical prosperity or survival, which are pure *subjective interests* on the animal's part, brought with it upon the scene and corresponding to no relation already there.[1] No mental action is right or intelligent which fails to fit this standard. No correspondence can pass muster till it shows its subservience to these ends. Corresponding itself to no actual outward thing; referring merely to a future which *may* be, but which these interests now say *shall* be; purely ideal, in a word, they judge, dominate, determine all correspondences between the inner and the outer. Which is as much as to say that *mere* correspondence with the outer world is a notion on which it is wholly impossible to base a definition of mental action. Mr. Spencer's occult reason for leaving unexpressed the most important part of

[1] These interests are the real *a priori* element in cognition. By saying that their pleasures and pains have nothing to do with correspondence, I mean simply this: To a large number of terms in the environment there may be inward correlatives of a neutral sort as regards feeling. The "correspondence" is already there. But, now, suppose some to be accented with pleasure, others with pain; that is a fact additional to the correspondence, a fact with no outward correlative. But it immediately orders the correspondences in this way: that the pleasant or interesting items are singled out, dwelt upon, developed into their farther connections, whilst the unpleasant or insipid ones are ignored or suppressed. The future of the Mind's development is thus mapped out in advance by the way in which the lines of pleasure and pain run. The interests precede the outer relations noticed. Take the utter absence of response of a dog or a savage to the greater mass of environing relations. How can you alter it unless you previously *awaken an interest – i.e.*, produce a susceptibility to intellectual pleasure in certain modes of cognitive exercise? Interests, then, are an all-essential factor which no writer pretending to give an account of mental evolution has a right to neglect.

the definition he works with probably lies in its apparent implication of subjective spontaneity. The mind, according to his philosophy, should be pure product, absolute derivative from the non-mental. To make it dictate conditions, bring independent interests into the game which may determine what we shall call correspondence, and what not, might, at first sight, appear contrary to the notion of evolution which forbids the introduction at any point of an absolutely new factor. In what sense the existence of survival interest does postulate such a factor we shall hereafter see. I think myself that it is possible to express all its outward results in non-mental terms. But the unedifying look of the thing, its simulation of an independent mental teleology, seems to have frightened Mr. Spencer here, as elsewhere, away from a serious scrutiny of the facts. But let us be indulgent to his timidity, and assume that survival was all the while a "mental reservation" with him, only excluded from his formula by reason of the comforting sound it might have to Philistine ears.

We should then have, as the embodiment of the highest ideal perfection of mental development, a creature of superb cognitive endowments, from whose piercing perceptions no fact was too minute or too remote to escape; whose all-embracing foresight no contingency could find unprepared; whose invincible flexibility of resource no array of outward onslaught could overpower; but in whom all these gifts were swayed by the single passion of love of life, of survival at any price. This determination filling his whole energetic being, consciously realized, intensified by meditation, becomes a fixed idea, would use all the other faculties as its means, and, if they ever flagged, would by its imperious intensity spur them and hound them on to ever fresh exertions and achievements. There can be no doubt that, if such an incarnation of earthly prudence existed, a race of beings in whom this monotonously narrow passion for tribal self-preservation were aided by every cognitive gift, they would soon be kings of all the earth. All known human races would wither before their breath, and be as dust beneath their conquering feet.

But whether any Spencerian would hail with hearty joy their advent is another matter. Certainly Mr. Spencer would not; while the common sense of mankind would stand aghast at the thought of them. Why does common opinion abhor such a being? Why does it crave greater "richness" of nature in its mental ideal? Simply because, to common sense, survival is only one out of many interests – *primus inter pares*, perhaps, but still in the midst of peers. What are these interests? Most men would reply that they are all that makes survival worth securing. The social affections, all the various forms of play, the thrilling intimations of art, the delights of philosophic contemplation, the rest of religious emotion, the joy of moral self-approbation, the charm of fancy and of wit – some or all of these are absolutely required to make the notion of mere existence tolerable; and individuals who, by their special powers, satisfy these desires are protected by their fellows and enabled

to survive, though their mental constitution should in other respects be lamentably ill-"adjusted" to the outward world. The story-teller, the musician, the theologian, the actor, or even the mere charming fellow, have never lacked means of support, however helpless they might individually have been to conform with those outward relations which we know as the powers of nature. The reason is very plain. To the individual man, as a social being, the interests of his fellow are a part of his environment. If his powers correspond to the wants of this social environment, he may survive, even though he be ill-adapted to the natural or "outer" environment. But these wants are pure subjective ideals, with nothing outward to correspond to them. So that, as far as the individual is concerned, it becomes necessary to modify Spencer's survival formula still further, by introducing into the term environment a reference, not only to existent things, but also to ideal wants. It would have to run in some such way as this: "Excellence of the individual mind consists in the establishment of inner relations more and more extensively conformed to the outward facts of nature, and to the ideal wants of the individual's fellows, but all of such a character as will promote survival or physical prosperity."

But here, again, common sense will meet us with an objection. Mankind desiderate certain qualities in the individual which are incompatible with his chance of survival being a maximum. Why do we all so eulogize and love the heroic, recklessly generous, and disinterested type of character? These qualities certainly imperil the survival of their possessor. The reason is very plain. Even if headlong courage, pride, and martyr-spirit do ruin the individual, they benefit the community as a whole whenever they are displayed by one of its members against a competing tribe. "It is death to you, but fun for us." Our interest in having the hero as he is, plays indirectly into the hands of our survival, though not of his.

This explicit acknowledgment of the survival interests of the tribe, as accounting for many interests in the individual which seem at first sight either unrelated to survival or at war with it, seems, after all, to bring back unity and simplicity into the Spencerian formula. Why, the Spencerian may ask, may not all the luxuriant foliage of ideal interests – aesthetic, philosophic, theologic, and the rest – which co-exist along with that of survival, be present in the tribe and so form part of the individual's environment, merely by virtue of the fact that they minister in an indirect way to the survival of the tribe as a whole? The disinterested scientific appetite of cognition, the sacred philosophic love of consistency, the craving for luxury and beauty, the passion for amusement, may all find their proper significance as processes of mind, strictly so-called, in the incidental utilitarian discoveries which flow from the energy they set in motion. Conscience, thoroughness, purity, love of truth, susceptibility to discipline, eager delight in fresh impressions, al though none of them are traits of Intelligence *in se*, may thus be marks of a general mental

energy, without which victory over nature and over other human competitors would be impossible. And, as victory means survival, and survival is the criterion of Intelligent "Correspondence," these qualities, though not expressed in the fundamental law of mind, may yet have been all the while understood by Mr. Spencer to form so many secondary consequences and corollaries of that law.

But here it is decidedly time to take our stand and refuse our aid in propping up Mr. Spencer's definition by any further good-natured translations and supplementary contributions of our own. It is palpable at a glance that a mind whose survival interest could only be adequately secured by such a wasteful array of energy squandered on side issues would be immeasurably inferior to one like that which we supposed a few pages back, in which the monomania of tribal preservation should be the one all-devouring passion.

Surely there is nothing in the essence of intelligence which should oblige it forever to delude itself as to its own ends, and to strive towards a goal successfully only at the cost of consciously appearing to have far other aspirations in view.

A furnace which should produce along with its metal fifty different varieties of ash and slag, a planing-mill whose daily yield in shavings far exceeded that in boards, would rightly be pronounced inferior to one of the usual sort, even though more energy should be displayed in its working, and at moments some of that energy be directly effective. If ministry to survival be the sole criterion of mental excellence, then luxury and amusement, Shakespeare, Beethoven, Plato, and Marcus Aurelius, stellar spectroscopy, diatom markings, and nebular hypotheses are by-products on too wasteful a scale. The slag-heap is too big – it abstracts more energy than it contributes to the ends of the machine; and every serious evolutionist ought resolutely to bend his attention henceforward to the reduction in number and amount of these outlying interests, and the diversion of the energy they absorb into purely prudential channels.

Here, then, is our dilemma: One man may say that the law of mental development is dominated solely by the principle of conservation; another, that richness is the criterion of mental evolution; a third, that pure cognition of the actual is the essence of worthy thinking – but who shall pretend to decide which is right? The umpire would have to bring a standard of his own upon the scene, which would be just as subjective and personal as the standards used by the contestants. And yet some standard there must be, if we are to attempt to define in any way the worth of different mental manifestations.

Is it not already clear to the reader's mind that the whole difficulty in making Mr. Spencer's law work lies in the fact that it is not really a constitutive, but a regulative, law of thought which he is erecting, and that he does not frankly say so? Every law of Mind must be either a law of the *cogitatum* or a law of the *cogitandum*. If it be a law in the sense of an analysis of what

we do think, then it will include error, nonsense, the worthless as well as the worthy, metaphysics, and mythologies as well as scientific truths which mirror the actual environment. But such a law of the *cogitatum* is already well known. It is no other than the association of ideas according to their several modes; or, rather, it is this association definitively perfected by the inclusion of the teleological factor of interest by Mr. Hodgson in the fifth chapter of his masterly *Time and Space*.

That Mr. Spencer, in the part of his work which we are considering, has no such law as this in view is evident from the fact that he has striven to give an original formulation to such a law in another part of his book, in that chapter, namely, on the associability of relations, in the first volume, where the apperception of times and places, and the suppression of association by similarity, are made to explain the facts in a way whose artificiality has puzzled many a simple reader.

Now, every living man would instantly define right thinking as thinking in correspondence with reality. But Spencer, in saying that right thought is that which conforms to existent outward relations, and this exclusively, undertakes to decide what the reality *is*. In other words, under cover of an apparently formal definition he really smuggles in a material definition of the most far-reaching import. For the Stoic, to whom *vivere convenienter naturae* was also the law of mind, the reality was an archetypal Nature; for the Christian, whose mental law is to discover the will of God, and make one's actions correspond thereto, *that* is the reality. In fact, the philosophic problem which all the ages have been trying to solve in order to make thought in some way correspond with it, and which disbelievers in philosophy call insoluble, is just that: What is the reality? All the thinking, all the conflict of ideals, going on in the world at the present moment is in some way tributary to this quest. To attempt, therefore, with Mr. Spencer, to decide the matter merely incidentally, to forestall discussion by a definition – to carry the position by surprise, in a word – is a proceeding savoring more of piracy than philosophy. No, Spencer's definition of what we ought to think cannot be suffered to lurk in ambush; it must stand out explicitly with the rest, and expect to be challenged and give an account of itself like any other ideal norm of thought.

We have seen how he seems to vacillate in his determination of it. At one time, "scientific" thought, mere passive mirroring of outward nature, purely registrative cognition; at another time, thought in the exclusive service of survival, would seem to be his ideal. Let us consider the latter ideal first, since it has the polyp's authority in its favor: "We must survive – that end must regulate all our thought." The poor man who said to Talleyrand, "*Il faut bien que je vive!*" expressed it very well. But criticise this ideals or transcend it as Talleyrand did by his cool reply, "*Je n'en vois pas la necessité*," and it can say nothing more for itself. *A priori* it is a mere brute teleological affirmation on a par with all others. Vainly you should hope to prove it to a person bent on

suicide, who has but the one longing – to escape, to cease. Vainly you would argue with a Buddhist or a German pessimist, for they feel the full imperious strength of the desire, but have an equally profound persuasion of its essential wrongness and mendacity. Vainly, too, would you talk to a Christian, or even to any believer in the simple creed that the deepest meaning of the world is moral. For they hold that mere conformity with the outward – worldly success and survival – is not the absolute and exclusive end. In the *failures* to "adjust" – in the rubbish-heap, according to Spencer – lies, for them, the real key to the truth – the sole mission of life being to teach that the outward actual is not the whole of being.

And, now – if, falling back on the scientific ideal, you say that to *know* is the one τέλος of intelligence – not only will the inimitable Turkish cadi in Layard's Nineveh praise God in your face that he seeks not that which he requires not, and ask, "Will much knowledge create thee a double belly?" – not only may I, if it please me, legitimately refuse to stir from my fool's paradise of theosophy and mysticism, in spite of all your calling (since, after all, your true knowledge and my pious feeling have alike nothing to back them save their seeming good to our respective personalities) – not only this, but to the average sense of mankind, whose ideal of mental nature is best expressed by the word "richness," your statistical and cognitive intelligence will seem insufferably narrow, dry, tedious, and unacceptable.

The truth appears to be that every individual man may, if it please him, set up his private categorical imperative of what rightness or excellence in thought shall consist in, and these different ideals, instead of entering upon the scene armed with a warrant – whether derived from the polyp or from a transcendental source – appear only as so many brute affirmations left to fight it out upon the chess-board among themselves. They are, at best, postulates, each of which must depend on the general consensus of experience as a whole to bear out its validity. The formula which proves to have the most massive destiny will be the true one. But this is a point which can only be solved *ambulando*, and not by any *a priori* definition. The attempt to forestall the decision is free to all to make, but all make it at their risk. Our respective hypotheses and postulates help to shape the course of thought, but the only thing which we all agree in assuming is, that thought will be coerced away from them if they are wrong. If Spencer to-day says, "Bow to the actual," whilst Swinburne spurns "compromise with the nature of things," I exclaim, "*Fiat justitia, pereat mundus*," and Mill says, "To hell I will go, rather than 'adjust' myself to an evil God," what umpire can there be between us but the future? The idealists and the empiricists confront each other like Guelphs and Ghibellines, but each alike waits for adoption, as it were, by the course of events.

In other words, we are all fated to be, *a priori*, teleologists whether we will or no. Interests which we bring with us, and simply posit or take our stand

upon, are the very flour out of which our mental dough is kneaded. The organism of thought, from the vague dawn of discomfort or ease in the polyp to the intellectual joy of Laplace among his formulas, is teleological through and through. Not a cognition occurs but feeling is there to comment on it, to stamp it as of greater or less worth. Spencer and Plato are *ejusdem farinae*. To attempt to hoodwink teleology out of sight by saying nothing about it, is the vainest of procedures. Spencer merely takes sides with the τέλος he happens to prefer, whether it be that of physical well-being or that of cognitive registration. He represents a particular teleology. Well might teleology (had she a voice) exclaim with Emerson's Brahma:

> "If the red slayer think he slays,
> Or if the slain think he is slain,
> They know not well the subtle ways
> I keep, and pass, and turn again.
>
> * * * * * * * * * *
>
> "They reckon ill who leave me out;
> When me they fly, I am the wings;
> I am the doubter and the doubt," etc.

But now a scientific man, feeling something uncanny in this omnipresence of a teleological factor dictating *how* the mind shall correspond – an interest seemingly tributary to nothing non-mental – may ask us what we meant by saying sometime back that in one sense it is perfectly possible to express the existence of interests in non-mental terms. We meant simply this: That the reactions or outward consequences of the interests could be so expressed. The interest of survival which has hitherto been treated as an ideal *should-be*, presiding from the start and marking out the way in which an animal must react, is, from an outward and physical point of view, nothing more than an objective future implication of the reaction (if it occurs) as an actual fact. If the animal's brain acts fortuitously in the right way, he survives. His young do the same. The reference to survival in noway preceded or conditioned the intelligent act; but the fact of survival was merely bound up with it as an incidental consequence, and may, therefore, be called accidental, rather than instrumental, to the production of intelligence. It is the same with all other interests. They are pleasures and pains incidentally implied in the workings of the nervous mechanism, and, therefore, in their ultimate origin, non-mental; for the idiosyncrasies of our nervous centers are mere "spontaneous variations," like any of those which form the ultimate *data* for Darwin's theory. A brain which functions so as to insure survival may, therefore, be called intelligent in no other sense than

a tooth, a limb, or a stomach, which should serve the same end – the sense, namely, of appropriate; as when we say "that is an intelligent device," meaning a device fitted to secure a certain end which we assume. If *nirvana* were the end, instead of survival, then it is true the means would be different, but in both cases alike the end would not precede the means, or even be coeval with them, but depend utterly upon them, and follow them in point of time. The fox's cunning and the hare's speed are thus alike creations of the non-mental. The τέλος they entail is no more an agent in one case than another, since in both alike it is a resultant. Spencer, then, seems justified in not admitting it to appear as an irreducible ultimate factor of Mind, any more than of Body.

This position is perfectly unassailable so long as one describes the phenomena in this manner from without. The τέλος in that case can only be hypothetically, not imperatively, stated: *if* such and such be the end, then such brain functions are the most intelligent, just as such and such digestive functions are the most appropriate. But such and such cannot be declared *as* the end, except by the commenting mind of an outside spectator. The organs themselves, in their working at any instant, cannot but be supposed indifferent as to what product they are destined fatally to bring forth, cannot be imagined whilst fatally producing one result to have at the same time a notion of a different result which should be their truer end, but which they are unable to secure.

Nothing can more strikingly show, it seems to me, the essential difference between the point of view of consciousness and that of outward existence. We can describe the latter only in teleological terms, hypothetically, or else by the addition of a supposed contemplating mind which measures what it sees going on by its private teleological standard, and judges it intelligent. But consciousness itself is not merely intelligent in this sense. It is *intelligent intelligence*. It seems both to supply the means and the standard by which they are measured. It not only *serves* a final purpose, but *brings* a final purpose – posits, declares it. This purpose is not a mere hypothesis – "*if* survival is to occur, then brain must so perform," etc. – but an imperative decree: "Survival *shall* occur, and, therefore, brain *must* so perform!" It seems hopelessly impossible to formulate anything of this sort in non-mental terms, and this is why I must still contend that the phenomena of subjective "interest," as soon as the animal consciously realizes the latter, appears upon the scene as an absolutely new factor, which we can only suppose to be latent thitherto in the physical environment by crediting the physical atoms, etc., each with a consciousness of its own, approving or condemning its motions.

This, then, must be our conclusion: That no law of the *cogitandum*, no normative receipt for excellence in thinking, can be authoritatively promulgated. The only formal canon that we can apply to mind which is unassailable is the barren truism that it must think rightly. We can express this in terms

of correspondence by saying that thought must correspond with truth; but whether that truth be actual or ideal is left undecided.

We have seen that the invocation of the polyp to decide for us that it is actual (apart from the fact that he does not decide in that way) is based on a principle which refutes itself if consistently carried out. Spencer's formula has crumbled into utter worthlessness in our hands, and we have nothing to replace it by except our several individual hypotheses, convictions, and beliefs. Far from being vouched for by the past, these are verified only by the future. They are all of them, in some sense, laws of the ideal. They have to keep house together, and the weakest goes to the wall. The survivors constitute the right way of thinking. While the issue is still undecided, we can only call them our prepossessions. But, decided or not, "go in" we each must for one set of interests or another. The question for each of us in the battle of life is, "Can we *come out* with it?" Some of these interests admit to-day of little dispute. Survival, physical well-being, and undistorted cognition of what is, will hold their ground. But it is truly strange to see writers like Messrs. Huxley and Clifford, who show themselves able to call most things in question, unable, when it comes to the interest of cognition, to touch it with their solvent doubt. They assume some mysterious imperative laid upon the mind, declaring that the infinite ascertainment of facts is its supreme duty, which he who evades is a blasphemer and child of shame. And yet these authors can hardly have failed to reflect, at some moment or other, that the disinterested love of information and still more the love of consistency in thought (that true scientific *oestrus*) and the ideal fealty to Truth (with a capital T), are all so many particular forms of aesthetic interest, late in their evolution, arising in conjunction with a vast number of similar aesthetic interests, and bearing with them no *a priori* mark of being worthier than these. If we may doubt one, we may doubt all. How shall I say that knowing fact with Messrs. Huxley and Clifford is a better use to put my mind to than feeling good with Messrs. Moody and Sankey, unless by slowly and painfully finding out that in the long run it works best?

I, for my part, cannot escape the consideration, forced upon me at every turn, that the knower is not simply a mirror floating with no foot hold anywhere and passively reflecting an order that he comes upon and finds simply existing. The knower is an actor, and co-efficient of the truth on one side, whilst on the other he registers the truth which he helps to create. Mental interests, hypotheses, postulates, so far as they are bases for human action – action which to a great extent transforms the world – help to *make* the truth which they declare. In other words, there belongs to mind, from its birth upward, a spontaneity, a vote. It is in the game, and not a mere looker-on; and its judgments of the *should-be*, its ideals, cannot be peeled off from the body of the *cogitandum* as if they were excrescences or meant at most survival. We know so little about the ultimate nature of things, or of ourselves,

that it would be sheer folly dogmatically to say that an ideal rational order may not be real. The only objective criterion of reality is coerciveness, in the long run, over thought. Objective facts, Spencer's outward relations, are real only because they coerce sensation. Any interest which should be coercive on the same massive scale would be *eodem jure* real. By its very essence, the reality of a thought is proportionate to the way it grasps us. Its intensity, its seriousness – its interest, in a word – taking these qualities, not at any given instant, but as shown by the total upshot of experience. If judgments of the *should-be* are fated to grasp us in this way, they are what "correspond." The ancients placed the conception of Fate at the bottom of things – deeper than the gods themselves. "The fate of thought," utterly barren and indeterminate as such a formula is, is the only unimpeachable regulative Law of Mind.

THE SENTIMENT OF RATIONALITY

William James, "The Sentiment of Rationality." *Mind* o.s. 4.3 (July 1879): 317–346.

I

What is the task which philosophers set themselves to perform? And why do they philosophise at all? Almost every one will immediately reply: They desire to attain a conception of the frame of things which shall on the whole be more rational than the rather fragmentary and chaotic one which everyone by gift of nature carries about with him under his hat. But suppose this rational conception attained by the philosopher, how is he to recognise it for what it is, and not let it slip through ignorance? The only answer can be that he will recognise its rationality as he recognises everything else, by certain subjective marks with which it affects him. When he gets the marks he may know that he has got the rationality.

What then are the marks? A strong feeling of ease, peace, rest, is one of them. The transition from a state of puzzle and perplexity to rational comprehension is full of lively relief and pleasure.

But this relief seems to be a negative rather than a positive character. Shall we then say that the feeling of rationality is constituted merely by the absence of any feeling of irrationality? I think there are very good grounds for upholding such a view. All feeling whatever, in the light of certain recent psychological speculations, seems to depend for its physical condition not on simple discharge of nerve-currents, but on their discharge under arrest, impediment or resistance. Just as we feel no particular pleasure when we breathe freely, but a very intense feeling of distress when the respiratory motions are prevented; so any unobstructed tendency to action discharges itself without the production of much cogitative accompaniment, and any perfectly fluent course of thought awakens but little feeling. But when the movement is inhibited or when the thought meets with difficulties, we experience a distress which yields to an opposite feeling of pleasure as fast as the obstacle is overcome. It is only when the distress is upon us that we can be said to strive, to crave, or to aspire. When enjoying plenary freedom to energise either in the way of motion or of thought, we are in a sort of an state in which we might say with Walt Whitman, if we cared to say anything about ourselves at such times, "I am sufficient as I am." This feeling of the sufficiency of the present moment, of its absoluteness – this absence of all need to explain it,

account for it or justify it – is what I call the Sentiment of Rationality. As soon, in short, as we are enabled from any cause whatever to think of a thing with perfect fluency, that thing seems to us rational.

Why we should constantly gravitate towards the attainment of such fluency cannot here be said. As this is not an ethical but a psychological essay, it is quite sufficient for our purposes to lay it down as an empirical fact that we strive to formulate rationally a tangled mass of fact by a propensity as natural and invincible as that which makes us exchange a hard high stool for an armchair or prefer travelling by railroad to riding in a springless cart.

Whatever modes of conceiving the cosmos facilitate this fluency of our thought, produce the sentiment of rationality. Conceived in such modes Being vouches for itself and needs no further philosophic formulation. But so long as mutually obstructive elements are involved in the conception, the pent-up irritated mind recoiling on its present consciousness will criticise it, worry over it, and never cease in its attempts to discover some new mode of formulation which may give it escape from the irrationality of its actual ideas.

Now mental ease and freedom may be obtained in various ways. Nothing is more familiar than the way in which mere custom makes us at home with ideas or circumstances which, when new, filled the mind with curiosity and the need of explanation. There is no more common sight than that of men's mental worry about things incongruous with personal desire, and their thoughtless incurious acceptance of whatever happens to harmonise with their subjective ends. The existence of evil forms a "mystery" – a "problem": there is no "problem of happiness." But, on the other hand, purely theoretic processes may produce the same mental peace which custom and congruity with our native impulses in other cases give; and we have forthwith to discover how it is that so many processes can produce the same result; and how Philosophy, by emulating or using the means of all, may attain to a conception of the world which shall be rational in the maximum degree, or be warranted in the most composite manner against the inroads of mental unrest or discontent.

II

It will be best to take up first the theoretic way. The facts of the world in their sensible diversity are always before us, but the philosophic need craves that they should be conceived in such a way as to satisfy the sentiment of rationality. The philosophic quest then is the quest of a conception. What now is a *conception?* It is a *teleological instrument*. It is a partial aspect of a thing which *for our purpose* we regard as its essential aspect, as the representative of the entire thing. In comparison with this aspect, whatever other properties and qualities the thing may have, are unimportant accidents which we may without blame ignore. But the essence, the ground of conception, varies with

the end we have in view. A substance like oil has as many different essences as it has uses to different individuals. One man conceives it as a combustible, another as a lubricator, another as a food; the chemist thinks of it as a hydro-carbon; the furniture-maker as a darkener of wood; the speculator as a commodity whose market price to-day is this and to-morrow that. The soap-boiler, the physicist, the clothes-scourer severally ascribe to it other essences in relation to their needs. Ueberweg's doctrine[1] that the essential quality of a thing is the quality of most *worth*, is strictly true; but Ueberweg has failed to note that the worth is wholly relative to the temporary interests of the conceiver. And, even, when his interest is distinctly defined in his own mind, the discrimination of the quality in the object which has the closest connexion with it, is a thing which no rules can teach. The only *a priori* advice that can be given to a man embarking on life with a certain purpose is the somewhat barren counsel: Be sure that in the circumstances that meet you, you attend to the *right* ones for your purpose. To pick out the right ones is the measure of the man. "Millions," says Hartmann, "stare at the phenomenon before a *genialer Kopf* pounces on the concept."[2] The genius is simply he to whom, when he opens his eyes upon the world, the "right" characters are the prominent ones. The fool is he who, with the same purposes as the genius, infallibly gets his attention tangled amid the accidents.

Schopenhauer expresses well this ultimate truth when he says that Intuition (by which in this passage he means the power to distinguish at a glance the essence amid the accidents) "is not only the source of all knowledge, but is knowledge κατ' ⸗ξοχ⸗ν ... is real *insight*.... *Wisdom*, the true view of life, the right look at things, and the judgment that hits the mark, proceed from the mode in which the man conceives the world which lies before him.... He who excels in this talent knows the (Platonic) ideas of the world and of life. Every case he looks at stands for countless cases; more and more he goes on to conceive of each thing in accordance with its true nature, and his acts like his judgments bear the stamp of his insight. Gradually his face too acquires the straight and piercing look, the expression of reason, and at last of wisdom. For the direct sight of essences alone can set its mark upon the face. Abstract knowledge about them has no such effect."[3]

The right conception for the philosopher depends then on his interests. Now the interest which he has above other men is that of reducing the manifold in thought to simple form. We can no more say why the philosopher is more peculiarly sensitive to this delight, than we can explain the passion some persons have for matching colours or for arranging cards

[1] *Logic*, English tr., p. 139.

[2] *Philosophie des Unbewussten*, 2te Auflage, p. 249.

[3] *Welt als Wille u. Vorstellung*, II., p. 83.

in a game of solitaire. All these passions resemble each other in one point; they are all illustrations of what may be called the aesthetic Principle of Ease. Our pleasure at finding that a chaos of facts is at bottom the expression of a single underlying fact is like the relief of the musician at resolving a confused mass of sound into melodic or harmonic order. The simplified result is handled with far less mental effort than the original data; and a philosophic conception of nature is thus in no metaphorical sense a labour-saving contrivance. The passion for parsimony, for economy of means in thought, is thus the philosophic passion *par excellence*, and any character or aspect of the world's phenomena which gathers up their diversity into simplicity will gratify that passion, and in the philosopher's mind stand for that essence of things compared with which all their other determinations may by him be overlooked.

Mere universality or extensiveness is then the one mark the philosopher's conceptions must possess. Unless they appear in an enormous number of cases they will not bring the relief which is his main theoretic need. The knowledge of things by their causes, which is often given as a definition of rational knowledge, is useless to him unless the causes converge to a minimum number whilst still producing the maximum number of effects. The more multiple are the instances he can see to be cases of his fundamental concept, the more flowingly does his mind rove from fact to fact in the world. The phenomenal transitions are no real transitions; each item is the same old friend with a slightly altered dress. This passion for unifying things may gratify itself, as we all know, at truth's expense. Everyone has friends bent on system and everyone has observed how, when their system has once taken definite shape, they become absolutely blind and insensible to the most flagrant facts which cannot be made to fit into it. The ignoring of data is, in fact, the easiest and most popular mode of obtaining unity in one's thought.

But leaving these vulgar excesses let us glance briefly at some more dignified contemporary examples of the hypertrophy of the unifying passion.

Its ideal goal gets permanent expression in the great notion of Substance, the underlying One in which all differences are reconciled. D'Alembert's often quoted lines express the postulate in its most abstract shape: "L'univers pour qui saurait l'embrasser d'un seul point de vue ne serait, s'il est permis de le dire, qu'un fait unique et une grande verité." Accordingly Mr. Spencer, after saying on page 158 of the first volume of his *Psychology*, that "no effort enables us to assimilate Feeling and Motion, they have nothing in common," cannot refrain on page 162 from invoking abruptly an "Unconditional Being common to the two."

The craving for Monism at any cost is the parent of the entire evolutionist movement of our day, so far as it pretends to be more than history. The

Philosophy of Evolution tries to show how the world at any given time may be conceived as absolutely identical, except in appearance, with itself at all past times. What it most abhors is the admission of anything which, appearing at a given point, should be judged essentially other than what went before. Notwithstanding the *lacunae* in Mr. Spencer's system; notwithstanding the vagueness of his terms; in spite of the sort of jugglery by which his use of the word "nascent" is made to veil the introduction of new primordial factors like consciousness, as if, like the girl in *Midshipman Easy,* he could excuse the illegitimacy of an infant, by saying it was a very little one – in spite of all this, I say, Mr. Spencer is, and is bound to be, the most popular of all philosophers, because more than any other he seeks to appease our strongest theoretic craving. To undiscriminating minds his system will be a sop; to acute ones a programme full of suggestiveness.

When Lewes asserts in one place that the nerve-process and the feeling which accompanies it are not two things but only two "aspects" of one and the same thing, whilst in other passages he seems to imply that the cognitive feeling and the outward thing cognised (which is always other than the nerve-process accompanying the cognitive act) are again one thing in two aspects (giving us thereby as the ultimate truth One Thing in Three Aspects, very much as Trinitarian Christians affirm it to be One God in Three Persons), – the vagueness of his mode only testifies to the imperiousness of his need of unity.

The crowning feat of unification at any cost is seen in the Hegelian denial of the Principle of Contradiction. One who is willing to allow that A and not-A are one, can be checked by few farther difficulties in Philosophy.

III

But alongside of the passion for simplification, there exists a sister passion which in some minds – though they perhaps form the minority – is its rival. This is the passion for distinguishing; it is the impulse to be *acquainted* with the parts rather than to comprehend the whole. Loyalty to clearness and integrity of perception, dislike of blurred outlines, of vague identifications, are its characteristics. It loves to recognise particulars in their full completeness, and the more of these it can carry the happier it is. It is the mind of Cuvier *versus* St. Hilaire, of Hume *versus* Spinoza. It prefers any amount of incoherence, abruptness and fragmentariness (so long as the literal details of the separate facts are saved) to a fallacious unity which swamps things rather than explains them.

Clearness *versus* Simplicity is then the theoretic dilemma, and a man's philosophic attitude is determined by the balance in him of these two cravings. When John Mill insists that the ultimate laws of nature cannot possibly be less numerous than the distinguishable qualities of sensation

which we possess, he speaks in the name of this aesthetic demand for clearness. When Prof. Bain says:[4] – "There is surely nothing to be dissatisfied with, or to complain of in the circumstance that the elements of our experience are in the last resort two and not one.... Instead of our being 'unfortunate' in not being able to know the essence of either matter or mind – in not comprehending their union, our misfortune would rather be to have to know anything different from what we do know," – he is animated by a like motive. All makers of architectonic systems like that of Kant, all multipliers of original principles, all dislikers of vague monotony, whether it bear the character of Eleatic stagnancy or of Heraclitic change, obey this tendency. *Ultimate kinds* of feeling bound together in harmony by laws, which themselves are *ultimate kinds* of relation, form the theoretic resting-place of such philosophers.

The unconditional demand which this need makes of a philosophy is that its fundamental terms should be representable. Phenomena are analysable into feelings and relations. Causality is a relation between two feelings. To abstract the relation from the feelings, to unify all things by referring them to a first cause, and to leave this latter relation with no term of feeling before it, is to violate the fundamental habits of our thinking, to baffle the imagination, and to exasperate the minds of certain people much as everyone's eye is exasperated by a magic-lantern picture or a microscopic object out of focus. Sharpen it, we say, or for heaven's sake remove it altogether.

The matter is not at all helped when the word Substance is brought forward and the primordial causality said to obtain between this and the phenomena; for Substance *in se* cannot be directly imaged by feeling, and seems in fact but to be a peculiar form of relation between feelings – the relation of organic union between a group of them and time. Such relations, represented as non-phenomenal entities, become thus the *bête noire* and pet aversion of many thinkers. By being posited as existent they challenge our acquaintance but at the same instant defy it by being defined as noumenal. So far is this reaction against the treatment of relational terms as metempirical entities carried, that the reigning British school seems to deny their function even in their legitimate sphere, namely as phenomenal elements or "laws" cementing the mosaic of our feelings into coherent form. Time, likeness, and unlikeness are the only phenomenal relations our English empiricists can tolerate. One of the earliest and perhaps the most famous expression of the dislike to relations considered abstractedly is the well-known passage from Hume: "When we run over libraries, persuaded of these principles, what havoc must we make! If we take in our hand any volume of divinity or school metaphysic, for

[4] "On Mystery, etc." *Fortnightly Review*, Vol. IV. N.S., page 394.

instance, let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact existence? No. Commit it then to the flames: for it can contain nothing but sophistry and illusion."[5]

Many are the variations which succeeding writers have played on this tune. As we spoke of the excesses of the unifying passion, so we may now say of the craving for clear representability that it leads often to an unwillingness to treat any abstractions whatever as if they were intelligible. Even to talk of space, time, feeling, power, &c., oppresses them with a strange sense of uncanniness. Anything to be real for them must be representable in the form of a *lump*. Its other concrete determinations may be abstracted from, but its *tangible* thinghood must remain. Minds of this order, if they can be brought to psychologise at all, abound in such phrases as "tracts" of consciousness, "areas" of emotion, "molecules" of feeling, "agglutinated portions" of thought, "gangs" of ideas &c., &c.

Those who wish an amusing example of this style of thought should read *Le Cerveau* by the anatomist Luys, surely the very worst book ever written on the much-abused subject of mental physiology. In another work, *Psychologie réaliste,* by P. Sièrebois (Paris 1876), it is maintained that "our ideas exist in us in a molecular condition, and are subject to continual movements.... Their mobility is as great as that of the molecules of air or any gas." When we fail to recall a word it is because our ideas are hid in some distant corner of the brain whence they cannot come to the muscles of articulation, or else "they have lost their ordinary fluidity.... These ideal molecules are material portions of the brain which differs from all other matter precisely in this property which it possesses of subdividing itself into very attenuated portions which easily take on the likeness in form and quality of all external objects." In other words, when I utter the word 'rhinoceros' an actual little microscopic rhinoceros gallops towards my mouth.

A work of considerable acuteness, far above the vulgar materialistic level, is that of Czolbe, *Grundzüge einer extensionalen Erkenntnisstheorie* (1875). This author explains our ideas to be extended substances endowed with mutual penetrability. The matter of which they are composed is "elastic like india-rubber." When "concentrated" by "magnetic self-attraction" into the middle of the brain, its "intensity" is such that it becomes conscious. When the attraction ceases, the idea-substance expands and diffuses itself into infinite space and so sinks from consciousness.

Again passing over these *quasi*-pathological excesses, we come to a permanent and, for our purpose, most important fact – the fact that many minds of the highest analytic power will tolerate in Philosophy no unifying

[5] *Essays*, ed. Green and Grose, II., p. 135.

terms but elements immanent in phenomena, and taken in their phenomenal and representable sense. Entities whose attributes are not directly given in feeling, phenomenal relations functioning as entities, are alike rejected. Spinozistic Substance, Spencerian Unknowable, are abhorred as unrepresentable things, numerically additional to the representable world. The substance of things for these clear minds can be no more than their common measure. The phenomena bear to it the same relation that the different numbers bear to unity. These contain no other matter than the repeated unit, but they may be classed as prime numbers, odd numbers, even numbers, square numbers, cube numbers, &c., just as truly and naturally as we class concrete things. The molecular motions, of which physicists hope that some day all events and properties will be seen to consist, form such an immanent unity of colossal simplifying power. The "infinitesimal event" of various modern writers, Taine for example, with its two "aspects," inner and outer, reaches still farther in the same direction. Writers of this class, if they deal with Psychology, repudiate the "soul" as a scholastic entity. The phenomenal unity of consciousness must flow from some element immutably present in each and every representation of the individual and binding the whole into one. To unearth and accurately define this phenomenal self becomes one of the fundamental tasks of Psychology.

But the greatest living insister on the principle that unity in our account of things shall not overwhelm clearness, is Charles Renouvier. His masterly exposition of the irreducible categories of thought in his *Essais de Critique générale* ought to be far better known among us than it is. The onslaughts which this eminently clear-headed writer has made and still makes in his weekly journal, the *Critique Philosophique*, on the vanity of the evolutionary principle of simplification, which supposes that you have explained away all distinctions by simply saying "they arise" instead of "they are," form the ablest criticism which the school of Evolution has received. Difference "thus displaced, transported from the *esse* to the *fieri*, is it any the less postulated? And does the *fieri* itself receive the least commencement of explanation when we suppose that everything which occurs, occurs little by little, by insensible degrees, so that, if we look at any one of these degrees, what happens does so as easily and clearly as if it did not happen at all? ... If we want a continuous production *ex nihilo*, why not say so frankly, and abandon the idea of a 'transition without break' which explains really nothing?"[6]

[6] *Critique Philosophique*, 12 Juillet, 1877, p. 383.

IV

Our first conclusion may then be this: No system of philosophy can hope to be universally accepted among men which grossly violates either of the two great aesthetic needs of our logical nature, the need of unity and the need of clearness, or entirely subordinates the one to the other. Doctrines of mere disintegration like that of Hume and his successors, will be as widely unacceptable on the one hand as doctrines of merely engulphing substantialism like those of Schopenhauer, Hartmann and Spencer on the other. Can we for our own guidance briefly sketch out here some of the conditions of most favourable compromise?

In surveying the connexions between data we are immediately struck by the fact that some are more intimate than others. Propositions which express those we call necessary truths; and with them we contrast the laxer collocations and sequences which are known as empirical, habitual or merely fortuitous. The former seem to have an *inward* reasonableness which the latter are deprived of. The link, whatever it be, which binds the two phenomena together, seems to extend from the heart of one into the heart of the next, and to be an essential reason why the facts should always and indefeasibly be as we now know them. "Within the pale we stand." As Lotze says:[7] – "The intellect is not satisfied with merely associated representations. In its constant critical activity thought seeks to refer each representation to the rational ground which conditions the alliance of what is associated and proves that what is grouped *belongs* together. So it separates from each other those impressions which merely coalesce without inward connexions, and it renews (while corroborating them) the bonds of those which, by the inward kinship of their content, have a right to permanent companionship."

On the other hand many writers seem to deny the existence of any such inward kinship or rational bond between things. Hume says: "All our distinct perceptions are distinct existences and the mind never perceives any real connexion among distinct existences."[8]

Hume's followers are less bold in their utterances than their master, but throughout all recent British Nominalism we find the tendency to enthrone mere juxtaposition as lord of all and to make of the Universe what has well been styled a Nulliverse. "For my part," says Prof. Huxley, "I utterly repudiate and, anathematise the intruder [Necessity]. Fact I know; and Law I know; but what is this Necessity, save an empty shadow of the mind's own throwing?"

And similarly J. S. Mill writes: "What is called explaining one law by another is but substituting one mystery for another, and does nothing to

[7] *Microcosmus*, 2nd ed. I., p. 261.

[8] *Treatise on Human Nature*, ed. T. H. Green, I., p. 559.

render the course of nature less mysterious. We can no more assign a *why* for the more extensive laws than for the partial ones. The explanation may substitute a mystery which has become familiar and has grown to seem not mysterious for one which is still strange. And this is the meaning of explanation in common parlance.... The laws thus explained or resolved are said to be *accounted for*; but the expression is incorrect if taken to mean anything more than what has been stated."[9]

And yet the very pertinacity with which such writers remind us that our explanations are in a strict sense of the word no explanations at all; that our causes never unfold the essential nature of their effects; that we never seize the inward reason why attributes cluster as they do to form things, seems to prove that they possess in their minds some ideal or pattern of what a genuine explanation would be like in case they should meet it. How could they brand our current explanations as spurious, if they had no positive notion whatever of the real thing?

Now have we the real thing? And yet may they be partly right in their denials? Surely both; and I think that the shares of truth may be easily assigned. Our "laws" *are* to a great extent but facts of larger growth, and yet things *are* inwardly and necessarily connected notwithstanding. The entire process of philosophic simplification of the chaos of sense consists of two acts, Identification and Association. Both are principles of union and therefore of theoretic rationality; but the rationality between things associated is outward and custom-bred. Only when things are identified do we pass inwardly and necessarily from one to the other.

The first step towards unifying the chaos is to classify its items. "Every concrete thing," says Prof. Bain, "falls into as many classes as it has attributes."[10] When we pick out a certain attribute to conceive it by, we literally and strictly identify it *in that respect* with the other concretes of the class having that attribute for its essence, concretes which the attribute recalls. When we conceive of sugar as a white thing it is *pro tanto* identical with snow; as a sweet thing it is the same as liquorice; *quâ* hydro-carbon, as starch. The attribute picked out may be *per se* most uninteresting and familiar, but if things superficially very diverse can be found to possess it buried within them and so be assimilated with each other, "the mind feels a peculiar and genuine satisfaction.... The intellect, oppressed with the variety and multiplicity of facts, is joyfully relieved by the simplification and the unity of a great principle."[11]

[9] *Logic*, 8th Edition, I., p. 549.

[10] *Ment. and Mor. Science*, p. 107.

[11] Bain, *Logic*, II, p. 120.

Who does not feel the charm of thinking that the moon and the apple are, as far as their relation to the earth goes, identical? of knowing respiration and combustion to be one? of understanding that the balloon rises by the same law whereby the stone sinks? of feeling that the warmth in one's palm when one rubs one's sleeve is identical with the motion which the friction checks? of recognising the difference between beast and fish to be only a higher degree of that between human father and son? of believing our strength when we climb or chop to be no other than the strength of the sun's rays which made the oats grow out of which we got our morning meal?

We shall presently see how the attribute performing this unifying function, becomes associated with some other attribute to form what is called a general law. But at present we must note that many sciences remain in this first and simplest classificatory stage. A classificatory science is merely one the fundamental concepts of which have few associations or none with other concepts. When I say a man, a lizard, and a frog are one in being vertebrates, the identification, delightful as it is in itself, leads me hardly any farther. "The idea that all the parts of a flower are modified leaves, reveals a connecting law, which surprises us into acquiescence. But now try and define the leaf, determine its essential characteristics, so as to include all the forms that we have named. You will find yourself in a difficulty, for all distinctive marks vanish, and you have nothing left, except that a leaf in this wider sense of the term is a lateral appendage of the axis of a plant. Try then to express the proposition 'the parts of a flower are modified leaves' in the language of scientific definition, and it reads, 'the parts of the flower are lateral appendages of the axis'."[12] Truly a bald result! Yet a dozen years ago there hardly lived a naturalist who was not thrilled with rapture at identifications in "philosophic" anatomy and botany exactly on a par with this. Nothing could more clearly show that the gratification of the sentiment of rationality depends hardly at all on the worth of the attribute which strings things together but almost exclusively on the mere fact of their being strung at all. Theological implications were the utmost which the attributes of archetypal zoology carried with them, but the wretched poverty of these proves how little they had to do with the enthusiasm engendered by archetypal identifications. Take Agassiz's conception of class-characters, order-characters &c., as "thoughts of God." What meagre thoughts! Take Owen's archetype of the vertebrate skeleton as revealing the artistic temperament of the Creator. It is a grotesque figure with neither beauty nor ethical suggestiveness, fitted rather to discredit than honour the Divine Mind. In short the conceptions led no farther than the identification pure and simple. The transformation which Darwin has effected in the classificatory sciences is simply this – that in his theory the class-essence is not a

[12] Helmholtz, *Popular Scientific Lectures*, p. 47.

unifying attribute pure and simple, but an attribute with wide associations. When a frog, a man and a lizard are recognised as one, not simply in having the same back-bone, &c., but in being all offspring of one parent, our thought instead of coming to a standstill, is immediately confronted with further problems and, we hope, solutions. Who were that parent's ancestors and cousins? Why was he chosen out of all to found such an enormous line? Why did he himself perish in the struggle to survive? &c.

Association of class-attributes *inter se*, is thus the next great step in the mind's simplifying industry. By it Empirical Laws are founded and sciences, from classificatory, become explanatory. Without it we should be in the position of a judge who could only decide that the cases in his court belonged each to a certain class, but who should be inhibited from passing sentence, or attaching to the class-name any further notion of duty, liability, or penalty. This *coupling* of the class-concept with certain determinate *consequences* associated therewithal, is what is practically important in the laws of nature as in those of society.

When, for example, we have identified prisms, bowls of water, lenses and strata of air as distorting media, the next step is to learn that all distorting media refract light rays towards the perpendicular. Such additional determination makes a law. But this law itself may be as inscrutable as the concrete fact we started from. The entrance of a ray and its swerving towards the perpendicular, may be simply *associated* properties, with, for aught we see, no inwardly necessary bond, coupled together as empirically as the colour of a man's eyes with the shape of his nose.

But such an empirical law may have its terms again classified. The essence of the medium may be to retard the light-wave's speed. The essence (in an obliquely-striking wave) of deflexion towards the perpendicular may be earlier retardation of that part of the wave-front which enters first, so that the remaining portion swings round it before getting in. Medium and bending towards perpendicular thus coalesce into the one identical fact of retardation. This being granted gives an inward explanation of all above it. But retardation itself remains an empirical coupling of medium and light-movement until we have classified both under a single concept. The explanation reached by the insight that two phenomena are at bottom one and the same phenomenon, is rational in the ideal and ultimate sense of the word. The ultimate identification of the subject and predicate of a mathematical theorem, an identification which we can always reach in our reasonings, is the source of the inward necessity of mathematical demonstration. We see that the top and bottom of a parallelogram must be equal as soon as we have unearthed in the parallelogram the attribute that it consists of two equal, juxtaposed triangles of which its top and bottom form homologous sides – that is, as soon as we have seen that top and bottom have an identical essence, their length, as being such sides, and that their position is an accident. This criterion of

identity is that which we all unconsciously use when we discriminate between brute fact and explained fact. There is no other test.

In the contemporary striving of physicists to interpret every event as a case of motion concealed or visible, we have an adumbration of the way in which a common essence may make the sensible heterogeneity of things inwardly rational. The cause is one motion, the effect the same motion transferred to other molecules; in other words, physics aims at the same kind of rationality as mathematics. In the second volume of Lewes's *Problems* we find this anti-Humean view that the effect is the "procession" of the cause, or that they are one thing in two aspects brought prominently forward.[13]

And why, on the other hand, do all our contemporary physical philosophers so vie with each other in the zeal with which they reiterate that in reality nerve-processes and brain-tremors "explain" nothing of our feelings? Why does "the chasm between the two classes of phenomena still remain intellectually impassable"?[14] Simply because, in the words of Spencer which we quoted a few pages back, feeling and motion have nothing whatever in common, no identical essence by which we can conceive both, and so, as Tyndall says, "pass by a process of reasoning from one to the other." The "double-aspect" school postulate the blank form of "One and the Same Fact," appeal to the image of the circle which is both convex and concave, and think that they have by this symbolic identification made the matter seem more rational.

Thus then the connexions of things become strictly rational only when, by successive substitutions of essences for things, and higher for lower essences, we succeed in reaching a point of view from which we can view the things as one. A and B are concretes; *a* and *b* are partial attributes with which for the present case we conceive them to be respectively identical (classify them) and which are coupled by a general law. M is a further attribute which rationally explains the general law as soon as we perceive it to form the essence of both *a* and *b*, as soon as we identify them with each other through it. The softening of asphalt pavements in August is explained first by the empirical law that heat, which is the essence of August, produces melting, which is the essence of the pavement's change, and secondly this law is inwardly rationalised by the conception of both heat and melting being at bottom one and the same fact, namely, increased molecular mobility.

Proximate and ultimate explanations are then essentially the same thing. Classification involves all that is inward in any explanation, and a perfected rationalisation of things means only a *completed* classification of them. Every

[13] This view is in growing favour with thinkers fed from empirical sources. See Wundt's *Physikalische Axiome* and the important article by A. Riehl, "Causalitat und Identität," in *Vierteljahrssch. f. wiss. Philos.* Bd. I., p. 265. The Humean view is ably urged by Chauncey Wright, *Philosophical Discussions*, N.Y. 1877, p. 406.

[14] Tyndall, *Fragments of Science*, 2nd ed., p. 121.

one feels that all explanation whatever, even by reference to the most proximate empirical law, does involve something of the essence of inward rationalisation. How else can we understand such words as these from Prof. Huxley? "The fact that it is impossible to comprehend how it is that a physical state gives rise to a mental state, no more lessens the value of our [empirical] explanation of the latter case, than the fact that it is utterly impossible to comprehend how motion is communicated from one body to another weakens the force of the explanation of the motion of one billiard-ball by showing that another has hit it."[15]

To return now to the philosophic problem. It is evident that our idea of the universe cannot assume an inwardly rational shape until each separate phenomenon is conceived as fundamentally identical with every other. But the important fact to notice is that in the steps by which this end is reached the really rationalising, pregnant moments are the successive steps of conception, the moments of picking out essences. The association of these essences into laws, the empirical coupling, is done by nature for us and is hardly worthy to be called an intellectual act. On the other hand the coalescence-into-one of all items in which the same essence is discerned, in other words the perception that an essence whether ultimate, simple and universal, or proximate and specific, is identical with itself wherever found, is a barren truism. The living question always is, Where *is* it found? To stand before a phenomenon and say *what* it is; in other words to pick out from it the embedded character (or characters) also embedded in the maximum number of *other* phenomena, and so identify it with them – here lie the stress and strain, here the test of the philosopher. So we revert to what we said far back: the genius can do no more than this; in Butler's words –

> "He knows *what's what*, and that's as high
> As metaphysic wit can fly."[16]

[15] "Modern Symposium," *XIXth Century*, Vol. I., 1877.

[16] This doctrine is perfectly congruous with the conclusion that identities are the only propositions necessary *a priori*, though of course it does not necessarily lead to that conclusion, since there may be in things elements which are not simple but bilateral or synthetic, like straightness and shortness in a line, convexity and concavity in a curve. Should the empiricists succeed in their attempt to resolve such Siamese-twin elements into habitual juxtapositions, the Principle of Identity would become the only *a priori* truth, and the philosophic problem like all our ordinary problems would become a question as to facts: *What* are these facts which we perceive to exist? Are there any existing facts corresponding to this or that conceived class? Lewes, in the interesting discussion on necessary and contingent truth in the Prolegomena to his *History* and in Chap. XIII. of his first *Problem*, seems at first sight to take up an opposite position, in that he maintains our commonly so-called contingent truths to be really necessary. But his treatment of the

V

We have now to ask ourselves how far this identification may be legitimately carried and what, when perfected, its real worth is. But before passing to these further questions we had best secure our ground by defending our fundamental notion itself from nominalistic attacks. The reigning British school has always denied that the same attribute *is* identical with itself in different individuals. I started above with the assumption that when we look at a subject with a certain purpose, regard it from a certain point of view, some one attribute becomes its essence and identifies it, *pro hac vice*, with a class. To this James Mill replies: "But what is meant by a mode of regarding things? This is mysterious; and is as mysteriously explained, when it is said to be the taking into view the particulars in which individuals agree. For what is there, which it is possible for the mind to take into view, in that in which individuals agree? Every colour is an individual colour, every size is an individual size, every shape is an individual shape. But things have no individual colour in common, no individual shape in common; no individual size in common; that is to say, they have neither shape, colour, nor size in common. What, then, is it which they have in common, which the mind can take into view? Those who affirmed that it was something, could by no means tell. They substituted words for things; using vague and mystical phrases, which, when examined, meant nothing";[17] the truth being according to this heroic author, that the only thing that can be possessed in common is a name. Black in the coat and black in the shoe agree only in that both are named black – the fact that on this view the *name* is never the same when used twice being quite overlooked. But the blood of the giants has grown weak in these days, and the nominalistic utterances of our contemporaries are like sweet-bells jangled, sadly out of tune. If they begin with a clear nominalistic note, they

question most beautifully confirms the doctrine I have advanced in the text. If the proposition "A is B" is ever true, he says it is so necessarily. But he proves the necessity by showing that what we mean by A is its essential attribute x, and what we mean by B is again x. Only *in so far* as A and B are identical is the proposition true. But he admits that a fact sensibly just like A may lack x, and a fact sensibly unlike B may have it. In either case the proposition to be true, must change. The contingency which he banishes from propositions, he thus houses in their terms; making as I do the act of conception, subsumption, classification, intuition, naming, or whatever else one may prefer to call it, the pivot on which thought turns. Before this act there is infinite indeterminateness – A and B may be anything. After the act there is the absolute certainty of truism – all x's are the same. *In* the act – is A, *x*? *is* B, *x*? or not? – we have the sphere of truth and error, of living experience, in short, of Fact. As Lewes himself says: "The only necessity is that a thing is what it is; the only contingency is that our proposition may not state what the thing is" (*Problems*, Vol. I., p. 395).

[17] *Analysis*, Vol. I., p. 249.

are sure to end with a grating rattle which sounds very like *universalia in re*, if not *ante rem*. In M. Taine,[18] who may fairly be included in the British School, they are almost *ante rem*. This *bruit de cloche fêlée* as the doctors say, is pathognomonic of the condition of Ockham's entire modern progeny.

But still we may find expressions like this: "When I say that the sight of any object gives me the *same* sensation or emotion to-day that it did yesterday, or the *same* which it gives to some other person, this is evidently an incorrect application of the word *same*; for the feeling which I had yesterday is gone never to return.... Great confusion of ideas is often produced, and many fallacies engendered, in otherwise enlightened understandings, by not being sufficiently alive to the fact (in itself always to be avoided), that they use the same name to express ideas so different as those of identity and undistinguishable resemblance."[19]

What are the exact facts? Take the sensation I got from a cloud yesterday and from the snow to-day. The white of the snow and that of the cloud differ in place, time and associates; they agree in quality, and we may say in origin, being in all probability both produced by the activity of the same brain tract. Nevertheless, John Mill denies our right to call the quality the same. He says that *it* essentially differs in every different occasion of its appearance, and that no two phenomena of which it forms part are really identical even as far as *it* goes. Is it not obvious that to maintain this view he must abandon the phenomenal plane altogether? Phenomenally considered, the white *per se is* identical with itself wherever found in snow or in cloud, to-day or to-morrow. If any nominalist deny the identity I ask him to point out the difference. *Ex hypothesi* the qualities are sensibly indistinguishable, and the only difference he can indicate is that of time and place; but these are not differences in the quality. If our quality be not the same with itself, what meaning has the word "same"? Our adversary though silenced may still grudge assent, but if he analyse carefully the grounds of this reluctance he will, I think, find that it proceeds from a difficulty in believing that the *cause* of the quality can be just the same at different times. In other words he abandons altogether the platform of the sensible phenomenon and ascends into the empyrean, postu-

[18] How can M. Taine fail to have perceived that the entire doctrine of "Substitution" so clearly set forth in the nominalistic beginning of his brilliant book is utterly senseless except on the supposition of realistic principles like those which he so admirably expounds at its close? How *can* the image be a useful substitute for the sensation, the tendency for the image, the name for the tendency, unless sensation, image, tendency and name be *identical* in some respect; in respect namely of function, of the relations they enter into? Were this realistic basis laid at the outset of Taine's *De l'Intelligence*, it would be one of the most consistent instead of one of the most self-contradictory works of our day.

[19] J. S. Mill, *Logic*, 8th Ed., I., p. 77.

lating some inner noumenal principle of *quality* + *time* + *place* + *concomitants*. The entire group being never twice alike, of course this ground, or being *in se*, of the quality must each time be distinct and, so to speak, personal. This transcendental view is frankly avowed by Mr. Spencer in his *Psychology*, II., p. 63 – (the passage is too complex to quote); but all nominalists must start from it, if they think clearly at all.[20]

We, who are phenomenists, may leave all metaphysical entities which have the power of producing whiteness to their fate, and content ourselves with the irreversible *datum* of perception that the whiteness after it *is* manifested is the same, be it here or be it there. Of all abstractions such entities are the emptiest, being ontological hypostatisations of the mere susceptibility of being distinguished, whilst this susceptibility has its real, nameable, phenomenal ground all the while, in the time, place, and relations affected by the attribute considered.

The truly wise man will take the phenomenon in its entirety and permanently sacrifice no one aspect to another. Time, place, and relations differ, he will freely say; but just as freely admit that the quality is identical with itself through all these differences. Then if, *to satisfy the philosophic interest*, it becomes needful to conceive this identical part as the essence of the several entire phenomena, he will gladly call them one; whilst if some other interest be paramount, the points of difference will become essential and the identity an accident. Realism is eternal and invincible in this phenomenal sense.

We have thus vindicated against all assailants our title to consider the world as a matter susceptible of rational formulation in the deepest, most inward sense, and not as a disintegrated sand-heap; and we are consequently at liberty to ask: (1) Whether the mutual identification of its items meet with any necessary limit; and (2) What, supposing the operation completed, its real worth and import amount to.

VI

In the first place, when we have rationally explained the connexion of the items A and B by identifying both with their common attribute x, it is obvious that we have really explained only so much of these items as *is* x. To explain the connexion of choke-damp and suffocation by the lack of oxygen is to leave

[20] I fear that even after this some persons will remain unconvinced, but then it seems to me the matter has become a dispute about words. If my supposed adversary, when he says that different times and places prevent a quality which appears in them from ever being twice the same, will admit that they do not make it in any conceivable way *different*, I will willingly abandon the words "same" and "identical" to his fury; though I confess it becomes rather inconvenient to have no single positive word left by which to indicate complete absence of difference.

untouched all the other peculiarities both of choke-damp and of suffocation, such as convulsions and agony on the one hand, density and explosibility on the other. In a word, so far as A and B contain *l*, *m*, *n* and *o*, *p*, *q*, respectively in addition to *x*, they are not explained by *x*. Each additional particularity makes its distinct appeal to our rational craving. A single explanation of a fact only explains it from a single point of view.[21] The entire fact is not accounted for until each and all of its characters have been identified with their likes elsewhere. To apply this now to universal formulas we see that the explanation of the world by molecular movements explains it only so far as it actually *is* such movements. To invoke the "Unknowable" explains only so much as is unknowable; "Love" only so much as is love; "Thought," so much as is thought; "Strife" so much as is strife. All data whose actual phenomenal quality cannot be identified with the attribute invoked as Universal Principle, remain outside as ultimate, independent *kinds* or *natures*, associated by empirical laws with the fundamental attribute but devoid of truly rational kinship with it. If A and B are to be *thoroughly* rationalised together, *l*, *m*, *n* and *o*, *p*, *q*, must each and all turn out to be so many cases of *x* in disguise. This kind of wholesale identification is being now attempted by physicists when they conceive of all the ancient, separate Forces as so many determinations of one and the same essence, molecular mass, position and velocity.

Suppose for a moment that this idea were carried out for the physical world, – the subjective sensations produced by the different molecular energies, colour, sound, taste, &c., &c., the relation of likeness and contrast, of time and position, of ease and effort, the emotions of pain and delight, in short, all the mutually irreducible categories of mental life, would still remain over. Certain writers strive in turn to reduce all these to a common measure, the primordial unit of feeling, or infinitesimal mental event which builds them up as bricks build houses. But this case is wholly different from the last. The physical molecule is conceived not only as having a being *in se* apart from representation, but as being essentially of representable kind. With magnified perceptions we should actually see it. The mental molecule, on the other hand, has by its very definition no existence except in being felt, and yet by the same definition never is felt. It is neither a fact in consciousness nor a fact out of

[21] In the number of the *Journal of Speculative Philosophy* for April 1879, Prof. John Watson most admirably asserts and expresses the truth which constitutes the back-bone of this article, namely that every manner of conceiving a fact is relative to some interest, and that there are no absolutely essential attributes – every attribute having the right to call itself essential in turn, and the truth consisting of nothing less than all of them together. I avow myself unable to comprehend as yet this author's Hegelian point of view, but his pages 164 to 172 are a most welcome corroboration of what I have striven to advance in the text.

consciousness, and falls to the ground as a transcendental absurdity. Nothing could be more inconclusive than the empirical arguments for the existence of this noumenal feeling which Tame and Spencer draw from the sense of hearing.

But let us for an instant waive all this and suppose our feelings reduced to one. We should then have two primordial natures, the molecule of matter and the molecule of mind, coupled by an empirical law. Phenomenally incommensurable, the attempt to reduce them to unity by calling them two "aspects" is vain so long as it is not pointed out who is there *adspicere*; and the *Machtspruch* that they are expressions of one underlying Reality has no rationalising function so long as that reality is confessed unknowable. Nevertheless the absolute necessity of an identical material substratum for the different species of feeling on the one hand, and the genera feeling and motion on the other, if we are to have any evolutionary *explanation* of things, will lead to ever renewed attempts at an atomistic hylozoism. Already Clifford and Taine, Spencer, Fechner, Zöllner, G. S. Hall, and more besides, have given themselves up to this ideal.

But again let us waive this criticism and admit that even the chasm between feeling and motion may be rationally bridged by the conception of the bilateral atom of being. Let us grant that this atom by successive compoundings with its fellows builds up the universe; is it not still clear that each item in the universe would still be explained only as to its general *quality* and not as to its other particular determinations? The particulars depend on the exact number of primordial atoms existing at the outset and their exact distances from each other. The "universal formula" of Laplace which Du Bois-Reymond has made such striking use of in his lecture *Ueber die Grenzen des Naturerkennens*, cannot possibly get along with fewer than this almost infinite number of data. Their homogeneity does not abate their infinity – each is a separate empirical fact.

And when we now retract our provisional admissions, and deny that feelings incommensurable *inter se* and with motion can be possibly unified, we see at once that the reduction of the phenomenal Chaos to rational form must stop at a certain point. It is a limited process, – bounded by the number of elementary attributes which cannot be mutually identified, the specific *qualia* of representation, on the one hand, and, on the other, by the number of entities (atoms or monads or what not) with their complete mathematical determinations, requisite for deducing the fulness of the concrete world. All these irreducible data form a system, no longer phenomenally rational, *inter se*, but bound together by what is for us an empirical law. We merely find the system existing as a matter of fact, and write it down. In short, a plurality of categories and an infinity of primordial entities, determined according to these categories, is the minimum of philosophic baggage, the only possible compromise between the need of clearness and the need of unity. All simpli-

fication, beyond this point, is reached either by throwing away the particular concrete determinations of the fact to be explained, or else it is illusory simplification. In the latter case it is made by invoking some sham term, some pseudo-principle, and conglomerating it and the data into one. The principle may be an immanent element but no true universal: Sensation, Thought, Will are principles of this kind; or it may be a transcendent entity like Matter, Spirit, Substance, the Unknowable, the Unconscious, &c.[22] Such attempts do but postulate unification, not effect it; and if taken avowedly to represent a mere claim, may be allowed to stand. But if offered as actual explanations, though they may serve as a sop to the rabble, they can but nauseate those whose philosophic appetite is genuine and entire. If we choose the former mode of simplification and are willing to abstract from the particulars of time, place and combination in the concrete world, we may simplify our elements very much by neglecting the numbers and collocations of our primordial elements and attending to their qualitative categories alone. The system formed by these will then really rationalise the universe so far as its qualities go. Nothing can happen in it incommensurable with these data, and practically this abstract treatment of the world as quality is all that philosophers aim at. They are satisfied when they can see it to be a place in which none but these qualities appear, and in which the same quality appears not only once but identically repeats itself. They are willing to ignore, or leave to special sciences the knowledge of what times, places and concomitants the recurring quality is likely to affect. The *Essais de Critique générale* of Renouvier form, to my mind, by far the ablest answer to the philosophic need thus understood, clearness and unity being there carried each to the farthest point compatible with the other's existence.

VII

And now comes the question as to the worth of such an achievement. How much better off is the philosopher when he has got his system than he was before it? As a mere phenomenal system it stands between two fires. On the one hand the unbridled craver of unity scorns it, as being incompletely rational, still to a great extent an empirical sand-heap; whilst on the other the practical man despises its empty and abstract barrenness. All it says is that the elements of the world are such and such and that each is identical with itself wherever found; but the question: Where is it found? (which is for the practical man the all-important question about each element) he is left to

[22] The idea of "God" in its popular function is open to neither of these objections, being conceived as a phenomenon standing in causal relation to other phenomena. As such, however, it has no unifying function of a properly *explanatory* kind.

answer by his own wit. Which, of all the essences, shall here and now be held the essence of this concrete thing, the fundamental philosophy never attempts to decide. We seem thus led to the conclusion that a system of categories is, on the one hand, the only possible philosophy, but is, on the other, a most miserable and inadequate substitute for the fulness of the truth. It is a monstrous abridgment of things which like all abridgments is got by the absolute loss and casting out of real matter. This is why so few human beings truly care for Philosophy. The particular determinations which she ignores are the real matter exciting other aesthetic and practical needs, quite as potent and authoritative as hers. What does the moral enthusiast care for philosophical ethics? Why does the *Æsthetik* of every German philosopher appear to the artist like the abomination of desolation? What these men need is a particular counsel, and no barren, universal truism.

> "Grau, theurer Freund, ist alle Theorie
> Und grün des Lebens goldner Baum."

The entire man, who feels all needs by turns, will take nothing as an equivalent for Life but the fulness of living itself. Since the essences of things are as a matter of fact spread out and disseminated through the whole extent of time and space, it is in their spread-outness and alternation that he will enjoy them. When weary of the concrete clash and dust and pettiness, he will refresh him by an occasional bath in the eternal spring, or fortify himself by a daily look at the immutable Natures. But he will only be a visitor, not a dweller in the region; he will never carry the philosophic yoke upon his shoulders, and when tired of the gray monotony of her problems and insipid spaciousness of her results, will always escape gleefully into the teeming and dramatic richness of the concrete world.

So our study turns back here to its beginning. We started by calling every concept a teleological instrument (*supra* p. [**insert correct page number here**]). No concept can be a valid substitute for a concrete reality except with reference to a particular interest in the conceiver. The interest of theoretic rationality, the relief of identification, is but one of a thousand human purposes. When others rear their heads it must pack up its little bundle and retire till its turn recurs. The exaggerated dignity and value that philosophers have claimed for their solutions is thus greatly reduced. The only virtue their theoretic conception need have is simplicity, and a simple conception is an equivalent for the world only so far as the world is simple; the world meanwhile, whatever simplicity it may harbour, being also a mightily complex affair. Enough simplicity remains, however, and enough urgency in our craving to reach it, to make the theoretic function one of the most invincible and authoritative of human impulses. All ages have their intellectual populace. That of our own day prides itself particularly on its love of Science and Facts

and its contempt for all metaphysics. Just weaned from the Sunday-school nurture of its early years, with the taste of the catechism still in its mouth, it is perhaps not surprising that its palate should lack discrimination and fail to recognise how much of ontology is contained in the "Nature," "Force" and "Necessary Law," how much mysticism in the "Awe," "Progress" and "Loyalty to Truth" or whatever the other phrases may be with which it sweetens its rather meagre fare of fragmentary physiology and physics. But its own inconsistency should teach it that the eradication of music, painting and poetry, games of chance and skill, manly sports and all other aesthetic energies from human life, would be an easy task compared with that suppression of Metaphysics which it aspires to accomplish. Metaphysics of some sort there must be. The only alternative is between the good Metaphysics of clear-headed Philosophy and the trashy Metaphysics of vulgar Positivism. Metaphysics, the quest of the last clear elements of things, is but another name for thought which seeks thorough self-consistency; and so long as men must think at all, some will be found willing to forsake all else to follow that ideal.

VIII

Suppose then the goal attained. Suppose we have at last a Metaphysics in which clearness and unity join friendly hands. 'Whether it be over a system of interlocked elements, or over a substance, or over such a simple fact as "phenomenon" or "representation," need not trouble us now. For the discussion which follows we will call the result the metaphysical Datum and leave its composite or simple nature uncertain. Whichever it be, and however limited as we have seen be the sphere of its utility, it satisfies, if no other need, at least the need of rationality. But now I ask: Can that which is the ground of rationality in all else be itself properly called rational? It would seem at first sight that in the sense of the word we have hitherto alone considered, it might. One is tempted at any rate to say that, since the craving for rationality in a theoretic or logical sense consists in the identification of one thing with all other outstanding things, a unique datum which left nothing else outstanding would leave no play for further rational, demand, and might thus be said to quench that demand or to be rational *in se*. No *otherness* being left to annoy the mind we should sit down at peace.

In other words, just as the theoretic tranquillity of the boor results from his spinning no further considerations about his chaotic universe which may prevent him from going about his practical affairs; so any brute datum whatever (provided it were simple and clear) ought to banish mystery from the Universe of the philosopher and confer perfect theoretic peace, inasmuch as there would then be for him absolutely no further considerations to spin.

This in fact is what some persons think. Prof. Bain says: "A difficulty is solved, a mystery unriddled, when it can be shown to resemble something else;

to be an example of a fact already known. Mystery is isolation, exception, or it may be apparent contradiction: the resolution of the mystery is found in assimilation, identity, fraternity. When all things are assimilated, so far as assimilation can go, so far as likeness holds, there is an end to explanation; there is an end to what the mind can do, or can intelligently desire.... The path of science as exhibited in modern ages, is towards generality, wider and wider, until we reach the highest, the widest laws of every department of things; there explanation is finished, mystery ends, perfect vision is gained."

But unfortunately this first answer will not hold. Whether for good or evil, it is an empirical fact that the mind is so wedded to the process of seeing an *other* beside every item of its experience, that when the notion of an absolute datum which is all is presented to it, it goes through its usual procedure and remains *pointing* at the void beyond, as if in that lay further matter for contemplation. In short, it spins for itself the further positive consideration of a Nonentity enveloping the Being of its datum; and as that leads to no issue on the further side, back recoils the thought in a circle towards its datum again. But there is no logical identity, no natural bridge between nonentity and this particular datum, and the thought stands oscillating to and fro, wondering "Why was there anything but nonentity? Why just this universal datum and not another? Why any thing at all?" and finds no end, in wandering mazes lost. Indeed, Prof. Bain's words are so untrue that in reflecting men it is just when the attempt to fuse the manifold into a single totality has been most successful, when the conception of the universe as a *fait unique* (in D'Alembert's words) is nearest its perfection, that the craving for further explanation, the ontological Θαυμάζειν arises in its extremest pungency.

As Schopenhauer says, "The uneasiness which keeps the never-resting clock of metaphysics in motion, is the consciousness that the non-existence of this world is just as possible as its existence".[23]

The notion of Nonentity may thus be called the parent of the philosophic craving in its subtlest and profoundest sense. Absolute existence is absolute mystery. Although *selbstständig*, it is not *selbstverständlich*; for its relations with the Nothing remain unmediated to our understanding. One philosopher only, so far as I know, has pretended to throw a logical bridge over this chasm. Hegel, by trying to show that Nonentity and Being as actually determined are linked together by series of successive identities, binds the whole of possible thought into an adamantine unity with no conceivable outlying notion to disturb the free rotary circulation of the mind within its bounds. Since such unchecked motion constitutes the feeling of rationality, he must be held, if he has succeeded, to have eternally and absolutely quenched all its logical demands.

[23] *Welt als Wille &c.*, 3 Auflage, I., p. 189.

But for those who, like most of us, deem Hegel's heroic effort to have failed, nought remains but to confess that when all has been unified to its supreme degree, (Prof. Bain to the contrary notwithstanding), the notions of a Nonentity, or of a possible Other than the actual, may still haunt our imagination and prey upon the ultimate data of our system. The bottom of Being is left logically opaque to us, a *datum* in the strict sense of the word, something which we simply come upon and find, and about which, (if we wish to act,) we should pause and wonder as little as possible. In this confession lies the lasting truth of Empiricism, and in it Empiricism and imaginative Faith join hands. The logical attitude of both is identical, they both say there is a *plus ultra* beyond all we know, a womb of unimagined other possibility. They only differ in their sentimental temper: Empiricism says, "Into the *plus ultra* you have no right to carry your anthropomorphic affirmations"; Faith says, "You have no right to extend to it your denials." The mere ontologic emotion of wonder, of mystery, has in some minds such a tinge of the rapture of sublimity, that for this aesthetic reason alone, it will be difficult for any philosophic system completely to exorcise it.

In truth, the philosopher's logical tranquillity is after all in essence no other than the boor's. Their difference regards only the point at which each refuses to let further considerations upset the absoluteness of the data he assumes. The boor does so immediately, and is therefore liable at any moment to the ravages of many kinds of confusion and doubt. The philosopher does not do so till unity has been reached, and is therefore warranted against the inroads of *those* considerations – but only practically not essentially secure from the blighting breath of the *ultimate* "Why?" Positivism takes a middle ground, and with a certain consciousness of the beyond abruptly refuses by an inhibitory action of the will to think any further, stamps the ground and says "Physics, I espouse thee! for better or worse, be thou my absolute!"

The Absolute is what has not yet been transcended, criticised or made relative. So far from being something quintessential and unattainable as is so often pretended, it is practically the most familiar thing in life. Every thought is absolute to us at the moment of conceiving it or acting upon it. It only becomes relative in the light of further reflection. This may make it flicker and grow pale – the notion of nonentity may blow in from the infinite and extinguish the theoretic rationality of a universal datum. As regards this latter, absoluteness and rationality are in fact convertible terms. And the chief effort of the rationalising philosopher must be to gain an absoluteness for his datum which shall be *stable* in the maximum degree, or as far as possible removed from exposure to those further considerations by which we saw that the vulgar *Weltanshauung* may so promptly be upset. I shall henceforward call the further considerations which may supervene and make relative or derationalise a mass of thought, the *reductive* of that thought. The *reductive* of absolute being is thus nonentity, or the notion of an *aliter possibile* which

it involves. The reductive of an absolute physics is the thought that all material facts are representations in a mind. The reductive of absolute time, space, causality, atoms, &c., are the so-called antinomies which arise as soon as we think fully out the thoughts we have begun. The reductive of absolute knowledge is the constant potentiality of doubt, the notion that the next thought may always correct the present one – resulting in the notion that a noumenal world is there mocking the one we think we know. Whatever we think, some reductive seems in strict theoretic legitimacy always imminently hovering over our thought ready to blight it. Doubleness dismissed at the front door re-enters in the rear and spoils the rationality of the simple datum we flattered ourselves we had attained. Theoretically the task of the philosopher, if he cannot reconcile the datum with the reductive by the way of identification *à la* Hegel, is to exorcise the reductive so that the datum may hold up its head again and know no fear. Prof. Bain would no doubt say that nonentity was a pseud-idea not derived from experience and therefore meaningless, and so exorcise that reductive.[24] The antinomies may be exorcised by the distinction between potentiality and actuality.[25] The ordinary half educated materialist comforts himself against idealists by the notion that, after all, thought is such an obscure mystical form of existence that it is almost as bad as no existence at all, and need not be seriously taken into account by a sensible man.

If nothing else could be conceived than thoughts or fancies, these would be credited with the maximum of reality. Their reductive is the belief in an objective reality of which they are but copies. When this belief takes the form of the affirmation of a noumenal world contrasted with all possible thought, and therefore playing no other part than that of reductive pure and simple, – to discover the formula of exorcism becomes, and has been recognised ever since Kant to be, one of the principal tasks of philosophy rationally understood.

The reductive used by nominalists to discredit the self-identity of the same attribute in different phenomena is the notion of a still higher degree of identity. We easily exorcise this reductive by challenging them to show what the higher degree of sameness can possibly contain which is not already in the lower.

The notion of Nonentity is not only a reductive; it can assume upon occasion an exorcising function. If, for example, a man's ordinary mundane

[24] The author of *A Candid Examination of Theism* (Trübner, 1878) exorcises Nonentity by the notion of the all-excluding infinitude of Existence, – whether reasonably or not I refrain from deciding. The last chapter of this work (published a year after the present text was written), is on "the final Mystery of Things," and impresses in striking language much that I have said.

[25] See Renouvier: *Premier Essai*.

consciousness feels staggered at the improbability of an immaterial thinking-principle being the source of all things, Nonentity comes in and says, "Contrasted with me, (that is, considered simply as *existent*) one principle is as probable as another." If the same mundane consciousness recoils at the notion of providence towards individuals or individual immortality as involving, the one too infinite a subdivision of the divine attention, the other a too infinite accumulation of population in the heavens, Nonentity says, "As compared with me all quantities are one: the wonder is all there when God has found it worth His while to guard or save a single soul."

But if the philosopher fails to find a satisfactory formula of exorcism for his datum, the only thing he can do is to "blink" the reductive at a certain point, assume the Given as his necessary ultimate, and proceed to a life whether of contemplation or of action based on that. There is no doubt that this half wilful act of arrest, this acting on an opaque necessity, is accompanied by a certain pleasure. See the reverence of Carlyle for brute fact: "There is an infinite significance in Fact." "Necessity," says a German philosopher,[26] and he means not rational but simply given necessity, "is the last and highest point that we can reach in a rational conception of the world.... It is not only the interest of ultimate and definitive knowledge, but also that of the feelings, to find a last repose and an ideal equilibrium, in an uttermost datum which can simply not be other than it is."

Such is the attitude of ordinary men in their theism, God's fiat being in physics and morals such an uttermost datum. Such also is the attitude of all hard-minded analysts and *Verstandemenschen*. Renouvier and Hodgson, the two foremost contemporary philosophers, promptly say that of experience as a whole no account can be given, but do not seek to soften the abruptness of the confession or reconcile us with our impotence.

Such mediating attempts may be made by more mystical minds. The peace of rationality may be sought through ecstacy when logic fails. To religious persons of every shade of doctrine moments come when the world as it is seems so divinely orderly, and the acceptance of it by the heart so rapturously complete, that intellectual questions vanish, nay the intellect itself is hushed to sleep – as Wordsworth says, "Thought is not, in enjoyment it expires." Ontological emotion so fills the soul that ontological speculation can no longer overlap it and put her girdle of interrogation-marks around existence. Even the least religious of men must have felt with our national ontologic poet, Walt Whitman, when loafing on the grass on some transparent summer morning, that "Swiftly arose and spread over him the peace and knowledge that pass all the argument of the earth." At such moments of energetic living we feel as if there were something diseased and contemptible, yea vile, in

[26] Dühring: *Cursus der Philosophie*, Leipzig 1876, p. 35.

theoretic grubbing and brooding. To feel "I *am* the truth" is to abolish the opposition between knowing and being.

Since the heart can thus wall out the ultimate irrationality which the head ascertains, the erection of its procedure into a systematised method would be a philosophic achievement of first-rate importance. As used by mystics hitherto it has lacked universality, being available for few persons and at few times, and even in these being apt to be followed by fits of "reaction" and "dryness"; but it may nevertheless be the forerunner of what will ultimately prove a true method. If all men could permanently say with Jacobi, "In my heart there is light," though they should for ever fail to give an articulate account of it, existence would really be rationalised.[27]

But if men should ever all agree that the mystical method is a subterfuge without logical pertinency, a plaster, but no cure, that the Hegelian method is fallacious, that the idea of Nonentity can therefore neither be exorcised nor identified, Empiricism will be the ultimate philosophy. Existence will be a brute Fact to which as a whole the emotion of ontologic wonder shall rightfully cleave, but remain eternally unsatisfied. This wonderfulness or mysteriousness will then be an essential attribute of the nature of things, and the exhibition and emphasising of it will always continue to be an ingredient in the philosophic industry of the race. Every generation will produce its Job, its Hamlet, its Faust or its Sartor Resartus.

With this we seem to have exhausted all the possibilities of purely theoretic rationality. But we saw at the outset that when subjectively considered ratio-

[27] A curious recent contribution to the construction of a universal mystical method is contained in the *Anaesthetic Revelation* by Benj. P. Blood (Amsterdam, N.Y., 1874). The author, who is a writer abounding in verbal felicities, thinks we may all grasp the secret of Being if we only intoxicate ourselves often enough with laughing-gas. "There is in the instant of recall from the anaesthetic stupor a moment in which the genius of being is revealed.... Patients try to speak of it but invariably fail in a lost mood of introspection.... But most will accept this as the central point of the illumination that sanity is not the basic quality of intelligence,... but that only in sanity is formal or contrasting thought, while the naked life is realised outside of sanity altogether. It is the instant contrast of this tasteless water of souls with formal thought as we *come to* that leaves the patient in an astonishment that the awful mystery of life is at last but a homely and common thing.... To minds of sanguine imagination there will be a sadness in the tenor of the mystery, as if the key-note of the universe were low – for no poetry, no emotion known to the normal sanity of man, can furnish a hint of its primeval prestige, and its all-but appalling solemnity; but for such as have felt sadly the instability of temporal things there is a comfort of serenity and ancient peace; while for the resolved and imperious spirit there are majesty and supremacy unspeakable." The logical characteristic of this state is said to be "an apodal sufficiency – to which sufficiency a wonder or fear of why it is sufficient cannot pertain and could be attributed only as an impossible disease or lack.... The disease of Metaphysics vanishes in the fading of the question and not in the coming of an answer."

nality can only be defined as perfectly unimpeded mental function. Impediments which arise in the purely theoretic sphere might perhaps be avoided if the stream of mental action should leave that sphere betimes and pass into the practical. The structural unit of mind is in these days, deemed to be a triad, beginning with a sensible impression, ending with a motion, and having a feeling of greater or less length in the middle. Perhaps the whole difficulty of attaining theoretic rationality is due to the fact that the very quest violates the nature of our intelligence, and that a passage of the mental function into the third stage before the second has come to an end in the *cul de sac* of its contemplation, would revive the energy of motion and keep alive the sense of ease and freedom which is its psychic counterpart. We must therefore inquire what constitutes the feeling of rationality in its *practical* aspect; but that must be done at another time and in another place.[28]

[28] This article is the first chapter of a psychological work on the motives which lead men to philosophise. It deals with the purely theoretic or logical impulse. Other chapters treat of practical and emotional motives and in the conclusion an attempt is made to use the motives as tests of the soundness of different philosophies.

ON THE FUNCTION OF COGNITION

William James, "On the Function of Cognition." *Mind* o.s. 10.1 (January 1885): 27–44.

The following inquiry is (to use a distinction familiar to readers of Mr. Shadworth Hodgson) not an inquiry into the "how it comes," but into the "what it is" of cognition. What we call acts of cognition are evidently realised through what we call brains and their events, whether there be "souls" dynamically connected with the brains or not. But with neither brains nor souls has this essay any business to transact. In it we shall simply assume that cognition *is* produced, somehow, and limit ourselves to asking what elements it contains, what factors it implies. In other words, our task is a purely analytic and introspective one; less important, possibly, than would be a successful research into the *causes* of cognition, but still interesting enough in its way.

Cognition is a function of consciousness. The first factor it implies is therefore a state of consciousness wherein the cognition shall take place. Having in *Mind* XXXIII. used the word "Feeling" to designate generically all states of consciousness considered subjectively, or without respect to their possible function, I shall then say that, whatever elements an act of cognition may imply besides, it at least implies the existence of a *feeling*. If the reader share the current antipathy to the word feeling, he may substitute for it, wherever I use it, the word "idea," taken in the old broad Lockian sense, or he may use the clumsy phrase "state of consciousness," or finally he may say "thought" instead.

Now it is to be observed that the common consent of mankind has agreed that some feelings are cognitive and some are simple facts having a subjective or, what one might almost call a physical, existence, but no such self-transcendent function as would be implied in their being pieces of knowledge. Our task is again limited here. We are not to ask, "How is self-transcendence possible?" We are only to ask, How comes it that common sense has assigned a number of cases in which it is assumed not only to be possible but actual? And what are the marks used by common sense to distinguish those cases from the rest? In short, our inquiry is a chapter in descriptive psychology, – hardly anything more.

Condillac embarked on a quest similar to this by his famous hypothesis of a statue to which various feelings were successively imparted. Its first feeling

was supposed to be one of fragrance. But to avoid all possible complication with the question of genesis, let us not attribute even to a statue the possession of our imaginary feeling. Let us rather suppose it attached to no matter, nor localized at any point in space, but left swinging in *vacuo*, as it were, by the direct creative *fiat* of a god. And let us also, to escape entanglement with difficulties about the physical or psychical nature of its "object," not call it a feeling of fragrance or of any other determinate sort, but limit ourselves to assuming that it is a feeling of *q*. What is true of it under this abstract name will be no less true of it in any more particular shape (such as fragrance, pain, hardness) the reader may suppose.

Now, if this feeling of *q* be the only creation of the god, it will of course form the entire universe. And if, to escape the cavils of that large class of persons who believe that *semper idem sentire ac non sentire* are the same,[1] we allow the feeling to be of as short a duration as they like, that universe will only need to last an infinitesimal part of a second. The feeling in question will thus be reduced to its fighting weight, and all that befalls it in the way of a cognitive function must be held to befall in the brief instant of its quickly snuffed-out life, – a life, it will also be noticed, that has no other moment of consciousness either preceding or following it.

Well now, can our little feeling, thus left alone in the universe, – for the god and we psychological critics may be supposed left out of the account, – can the feeling, I say, be said to have any sort of a cognitive function? For it to *know*, there must be something to be known. What is there, on the present supposition? One may reply, "the feeling's content *q*." But does it not seem more proper to call this the feeling's *quality* than its content? Does not the word "content" suggest that the feeling itself has already been discriminated as an act from its content as an object? And would it be quite safe to assume so promptly that the quality *q* of a feeling is one and the same thing with a feeling of the quality *q*? The quality *q*, so far, is an entirely subjective fact which the feeling carries in its pocket, so to speak, endogenously. If anyone

[1] "The Relativity of Knowledge," held in this sense, is, it may be observed in passing, one of the oddest of philosophic superstitions. Whatever facts may be cited in its favour are due to the properties of nerve-tissue, which may be exhausted by too prolonged an excitement. Patients with neuralgias that last unremittingly for days, can, however, assure us that the limits of this nerve-law are pretty widely drawn. But if we physically could get a feeling that should last eternally unchanged, what atom of logical or psychological argument is there to prove that it would not be felt as long as it lasted, and felt for just what it is, all that time? The reason for the opposite prejudice seems to be our reluctance to think that so *stupid* a thing as such a feeling would necessarily be, should be allowed to fill eternity with its presence. An interminable acquaintance, leading to no knowledge-*about*, – such would be its condition. (Since writing this note I have read with the greatest pleasure Stumpf's demolition of the Relativity-doctrine in §1 of his *Tonpsychologie*, and beg leave to urge the study of it upon all readers.)

pleases to dignify so simple a fact as this by the name of knowledge, of course nothing can prevent him. But let us keep closer to the path of common usage, and reserve the name knowledge for the cognition of "realities," meaning by realities things that exist independently of the feeling through which their cognition occurs. If the content of the feeling occur nowhere in the universe outside of the feeling itself, and perish with the feeling, common usage refuses to call it a reality, and brands it as a subjective feature of the feeling's constitution, or at the most as the feeling's *dream*.

For the feeling to be cognitive in the specific sense, then, it must be self-transcendent; and we must prevail upon the god to create a reality outside of it to correspond to its intrinsic quality *q*. Thus only can it be redeemed from the condition of being a solipsism. If now the new-created reality *resemble* the feeling's quality *q*, I say that the feeling may be held by us *to be cognisant of that reality*.

This first instalment of my thesis is sure to be attacked. But one word before defending it. "Reality" has become our warrant for calling a feeling cognitive; but what becomes our warrant for calling anything reality? *Quis custodiet custodem ipsum?* The only reply is – the faith of the psychologist, critic, or inquirer. At every moment of his life he finds himself subject to a belief in *some* realities, even though his realities of this year should prove to be his illusions of the next. Whenever he finds that the feeling he is studying contemplates what he himself regards as a reality, he must of course admit the feeling itself to be truly cognitive. We are ourselves the critics here; and we shall find our burden much lightened by being allowed to take reality in this relative and provisional way. Every science must make some assumptions. Psychologists and *Erkenntnisstheoretiker* are but fallible mortals. When they study the function of cognition, they do it by means of the same function in themselves. And knowing that the fountain cannot go higher than its source, we should promptly confess that our results in this field are affected by our own liability to err. The most we can claim is, that what we say about cognition may be counted as true as what we say *about anything else*. If our hearers agree with us about what are to be held "realities," they will perhaps also agree to our doctrine of the way in which they are known. We cannot ask for more.

Our terminology shall follow the spirit of these remarks. We will deny the function of knowledge to any feeling whose quality or content we do not ourselves believe to exist outside of that feeling as well as in it. We may call such a feeling a dream if we like; we shall have to see later on whether we can call it a fiction or an error.

To revert now to our thesis. Followers of Berkeley and Reid will immediately cry out, "How *can* a reality *resemble* a feeling?" Here we find how wise we were to name the quality of the feeling by an algebraic letter *q*. We flank the whole difficulty of resemblance between an inner state and an outward reality, by leaving it free to anyone to postulate as the reality whatever sort

of thing he thinks *can* resemble a feeling, – if not an outward thing, then another feeling like the first one, – the mere feeling *q* in the critic's mind for example. Evading thus this objection, we turn to another which is sure to be urged.

It will come from those philosophers to whom "thought," in the sense of a knowledge of relations, is the all in all of mental life; and who hold a merely "feeling"-consciousness to be no better – one would sometimes say from their utterances, a good deal worse – than no consciousness at all. Such phrases as these, for example, are common to-day in the mouths of those who claim to walk in the footprints of Kant and Hegel rather than in the ancestral English paths: "A perception detached from all others, 'left out of the heap we call a mind,' being out of all relation, has no qualities – is simply nothing. We can no more consider it than we can see vacancy." "It is simply in itself fleeting, momentary, unnameable (because while we name it it has become another), and for the very same reason unknowable, the very negation of knowability." "Exclude from what we have considered real all qualities constituted by relation, we find that none are left."

Although such citations as these from the late Professor Green might be multiplied almost indefinitely, it would hardly repay the pains, so egregiously false is the doctrine they teach. Our little supposed feeling, whatever it may be, from the cognitive point of view, whether a bit of knowledge or a dream, is certainly no psychical zero. It is a most positively and definitely qualified inner fact, with a complexion all its own. Of course there are many mental facts which it is *not*. It knows *q*, if *q* be a reality, with a very minimum of knowledge. It neither dates nor locates it. It neither classes nor names it. And it neither knows itself as a feeling, nor contrasts itself with other feelings, nor estimates its own duration or intensity. It is, in short, if there is no more of it than this, a most dumb and helpless and useless kind of thing.

But if we must describe it by so many negations, and if it can say nothing *about* itself or *about* anything else, by what right do we deny that it is a psychical zero? And may not the "relationists" be right after all?

In the innocent looking word "about" lies the solution of this riddle; and a simple enough solution it is when frankly looked at. A quotation from a too seldom quoted book, the *Exploratio Philosophica* of John Grote (London, 1865), p. 60, will form the best introduction to it.

> "Our knowledge may be contemplated in either of two ways, or, to use other words, we may speak in a double manner of the 'object' of knowledge. That is, we may either use language thus: we *know* a thing, a man, &c.; or we may use it thus: we know such and such things *about* the thing, the man, &c. Language in general, following its true logical instinct, distinguishes between these two applications of the notion of knowledge, the one being *gnònai, noscere, kennen, connaître,* the other

being *e˛d™nai, scire, wissen, savoir*. In the origin, the former may be considered more what I have called phenomenal – it is the notion of knowledge as *acquaintance* or familiarity with what is known; which notion is perhaps more akin to the phenomenal bodily communication, and is less purely intellectual than the other; it is the kind of knowledge which we have of a thing by the presentation to the senses or the representation of it in picture or type, a *Vorstellung*. The other, which is what we express in judgments or propositions, what is embodied in *Begriffe* or concepts without any necessary imaginative representation, is in its origin the more intellectual notion of knowledge. There is no reason, however, why we should not express our knowledge, whatever its kind, in either manner, provided only we do not confusedly express it, in the same proposition or piece of reasoning, in both."

Now obviously if our supposed feeling of *q* is (if knowledge at all) only knowledge of the mere acquaintance-type, it is milking a he-goat, as the ancients would have said, to try to extract from it any deliverance *about* anything under the sun, even about itself. And it is as unjust after our failure to turn upon it and call it a psychical nothing, as it would be, after our fruitless attack upon the billy-goat, to proclaim the non-lactiferous character of the whole goat-tribe. But the entire industry of the Hegelian school in trying to shove simple sensation out of the pale of philosophic recognition is founded on this false issue. It is always the "speechlessness" of sensation, its inability to make any "statement,"[2] that is held to make the very notion of it meaningless, and to justify the student of knowledge in scouting it out of existence. "Significance," in the sense of standing as the *sign* of other mental states, is taken to be the sole function of what mental states we have; and from the perception that our little primitive sensation has as yet no significance in this literal sense, it is an easy step to call it first meaningless, next senseless, then vacuous, and finally to brand it as absurd and inadmissible. But in this universal liquidation, this everlasting slip, slip, slip, of direct acquaintance into knowledge-*about*, of things into their relations, until at last nothing is left between which the relations can be supposed to obtain, does not all "significance" depart from the relations also? And when our knowledge "about" things has reached its never so complicated perfection, must there not needs abide alongside of it and inextricably mixed in with it some acquaintance with *what* things all this knowledge is about?

Now, our supposed little feeling gives a *what*; and if other feelings should succeed which remember the first, its *what* may stand as subject or predicate of some piece of knowledge-about, of some judgment, perceiving relations

[2] See, for example, Green's Introduction to Hume's *Treatise of Human Nature,* p. 36.

between it and other *whats*, which the other feelings may know. The hitherto dumb *q* will then receive a name and be no longer "speechless." But every name, as students of logic know, has its "denotation"; and the denotation always means some fact, or content, relationless *ab extra*, or with its internal relations unanalysed, like the *q* which our primitive sensation is supposed to know. No relation-expressing proposition is possible except on the basis of a preliminary acquaintance with such "facts," with such contents, as this. Let the *q* be fragrance, let it be toothache, or let it be a more complex kind of feeling, like that of the full-moon swimming in her blue abyss, it must first come in that simple shape, and be held fast in that "first intention," before any knowledge *about* it can be attained. The knowledge *about* it is *it* with a context added. Undo *it*, and what is added cannot be *con*text.[3]

Let us say no more then about this objection, but enlarge our thesis, thus: If there be in the universe a *q* other than the *q* in the feeling, the latter has acquaintance with an entity ejective to itself; an acquaintance moreover, which, as mere acquaintance, it is hard to imagine susceptible either of improvement or increase, being in its way complete; and which obliges us (so long as we refuse not to call acquaintance knowledge) to say not only that the feeling is cognitive, but that all qualities of feeling, so long as there is anything outside of them which they resemble, are feelings of qualities of existence, and perceptions of outward truth.

The point of this vindication of the cognitive function of the first feeling lies, it will be noticed, in the discovery that *q* does exist elsewhere than in it. In case this discovery were not made, we could not be sure the feeling was cognitive; and in case there were nothing outside to be discovered, we should have to call the feeling a dream. But the feeling itself cannot make the discovery. Its own *q* is the only *q* it grasps; and its own nature is not a particle altered by having the self-transcendent function of cognition either added to it or taken away. The function is accidental; synthetic, not analytic; and falls outside and not inside its being.[4]

[3] If A enters and B exclaims, "Didn't you see my brother on the stairs?" we all hold that A may answer, "I saw him, but didn't know he was your brother"; ignorance of brotherhood not abolishing power to see. But those who, on account of the unrelatedness of the first facts with which we become acquainted, deny them to be "known" to us, ought in consistency to maintain that if A did not perceive the relationship of the man on the stairs to B, it was impossible he should have noticed him at all.

[4] It seems paradoxical to call so important a function accidental, but I do not see how we can mend the matter. Just as, if we start with the reality and ask how it may come to be known, we can only reply by invoking a feeling which shall *reconstruct* it in its own more private fashion; so, if we start with the feeling and ask how it may come to know, we can only reply by invoking a reality which shall *reconstruct* it in its own more public fashion. In either case, however, the datum we start with remains just what it was. One

A feeling feels as a gun shoots. If there be nothing to be felt or hit, they discharge themselves *ins Blaue hinein*. If, however, something starts up opposite them, they no longer simply shoot or feel, they hit and know.

But with this arises a worse objection than any yet made. We the critics look on and see a real *q* and a feeling of *q*; and because the two resemble each other, we say the one knows the other. But what right have we to say this until we know that the feeling of *q* means to stand for or represent just that *same* other *q*? Suppose, instead of one *q*, a number of real *q*'s in the field. If the gun shoots and hits, we can easily see which one of them it hits. But how can we distinguish which one the feeling knows? It knows the one it stands for. But which one *does* it stand for? It declares no intention in this respect. It merely resembles; it resembles all indifferently; and resembling, *per se*, is not necessarily representing or standing-for at all. Eggs resemble each other, but do not on that account represent, stand for, or know each other. And if you say this is because neither of them is a *feeling*, then imagine the world to consist of nothing but toothaches, which *are* feelings, feelings resembling each other exactly, – would they know each other the better for all that?

The case of *q* being a bare quality like that of toothache-pain is quite different from that of its being a concrete individual thing. There is practically no test for deciding whether the feeling of a bare quality means to represent it or not. It can *do* nothing to the quality beyond resembling it, simply because an abstract quality is a thing to which nothing can be done. Being without context or environment or *principium individuationis*, a quiddity with no haecceity, a Platonic idea, even duplicate editions of such a quality (were they possible), would be indiscernible, and no sign could be given, no result altered, whether the feeling meant to stand for this edition or for that, or whether it simply resembled the quality without meaning to stand for it at all. Of our quality, resembling the feeling, and supposed to form the only reality in the world, we can say, however, that it is known to the feeling as much as in the nature of things it can possibly be known to any cognitive agency whatever, however perfect, – the feeling knowing of it all there is to be known, and standing for it and discriminating it as much as it admits of being discriminated and stood-for at all.

If now we grant a genuine pluralism of editions to the quality *q*, by assigning to each a *context* which shall distinguish it from its mates, we may proceed to explain which edition of it the feeling knows, by extending our principle of resemblance to the context too, and saying the feeling knows the particular

may easily get lost in verbal mysteries about the difference between quality of feeling and feeling of quality, between receiving and reconstructing the knowledge of a reality. But at the end we must confess that the notion of real cognition involves an unmediated dualism of the knower and the known. See Bowne's *Metaphysics*, New York, 1882, pp. 403–412, and various passages in Lotze, *e.g.*, *Logic*, §308.

q whose context it most exactly duplicates. But here again the theoretic doubt recurs: duplication and coincidence, are they knowledge? The gun shows which *q* it points to and hits, by *breaking* it. Until the feeling can show us which *q* it points to and knows, by some equally flagrant token, why are we not free to deny that it either points to or knows any one of the real *q*'s at all, and to affirm that the word "resemblance" exhaustively describes its relation to the reality?

Well, as a matter of fact, every actual feeling *does* show us, quite as flagrantly as the gun, which *q* it points to; and practically in concrete cases the matter is decided by an element we have hitherto left out. Let us pass from abstractions to possible instances, and ask our obliging *deus ex machina* to frame for us a richer world. Let him send me, for example, a dream of the death of a certain man, and let him simultaneously cause the man to die. How would our practical instinct spontaneously decide whether this were a case of cognition of the reality, or only a sort of marvellous coincidence of a resembling reality with my dream? Just such puzzling cases as this are what the "Society for Psychical Research" is busily collecting and trying to interpret in the most reasonable way.

If my dream were the only one of the kind I ever had in my life, if the context of the death in the dream differed in many particulars from the real death's context, and if my dream led me to no action about the death, unquestionably we should all call it a strange coincidence, and naught besides. But if the death in the dream had a long context, agreeing point for point with every feature that attended the real death; if I were constantly having such dreams, all equally perfect, and if on awaking I had a habit of acting immediately as if they were true and so getting 'the start' of my more tardily instructed neighbours, – we should probably all have to admit that I had some mysterious kind of clairvoyant power, that my dreams in an inscrutable way meant just those realities they figured, and that the word "coincidence" failed to touch the root of the matter. And whatever doubts anyone preserved would completely vanish, if it should appear that from the midst of my dream I had the power of *interfering* with the course of the reality, and making the events in it turn this way or that, according as I dreamed they should. Then at least it would be certain that my waking critics and my dreaming self were dealing with the *same*.

And thus do men invariably decide such a question. *The falling of the dream's practical consequences* into the real world, and the *extent* of the resemblance between the two worlds are the criteria they instinctively use.[5]

[5] The thoroughgoing objector might, it is true, still return to the charge, and, granting a dream which should completely mirror the real universe, and all the actions dreamed in which should be instantly matched by duplicate actions in this universe, still insist that this is nothing more than Leibnizian harmony, and that it is as far as ever from being made

All feeling is for the sake of action, all feeling results in action, – to-day no argument is needed to prove these truths. But by a most singular disposition of nature which we may conceive to have been different, *my feelings act upon the realities within my critic's world*. Unless, then, my critic can prove that my feeling does not "point to" those realities which it acts upon, how can he continue to doubt that he and I are alike cognisant of one and the same real world? If the action is brought about in one world, that must be the world the feeling intends; if in another world, *that* is the world the feeling has in mind. If your feeling bear no fruits in my world, I call it utterly detached from my world; I call it a solipsism, and call its world a dream-world. If your toothache do not prompt you to *act* as if I had a toothache, nor even as if I had a separate existence; if you neither say to me, "I know now how you must suffer!" nor ask me, "Do you know a remedy?" I deny that your feeling, however it may resemble mine, is really cognisant of mine. It gives no *sign* of being cognisant, and such a sign is absolutely necessary to my admission that it is.

Before I can think you to mean my world, you must affect my world; before I can think you to mean much of it, you must affect much of it; and before I can be sure you mean it *as I do*, you must affect it *just as I should* if I were in your place. Then I, your critic, will gladly believe that we are thinking, not only of the same reality, but that we are thinking it *alike*, and thinking a great part of its extent.

Without the practical effects of our neighbour's feelings on our own world, we should never suspect the existence of our neighbour's feelings at all, and of course should never find ourselves playing the critic as we do in this article. The constitution of nature is very peculiar. In the world of each of us are certain objects called human bodies, which move about and act on all the other objects there, and the occasions of their action are in the main what the occasions of our action would be, were they our bodies. They use words and gestures, which, if we used them, would have thoughts behind them, – no mere thoughts "*überhaupt*," however, but strictly determinate thoughts. I think you have the notion of fire in general, because I see you act towards this fire in my room just as I act towards it, – poke it and present your person towards it, and so forth. But that binds me to believe that if you feel "fire"

clear whether the dream-world refers to that other world, all of whose details it so closely copies. This objection leads deep into metaphysics. I do not impugn its importance, and justice obliges me to say that but for the teachings of my colleague, Dr. Josiah Royce, I should neither have grasped its full force nor made my own practical and psychological point of view as clear to myself as it is. On this occasion I prefer to stick steadfastly to that point of view; but I hope that Dr. Royce's more fundamental criticism of the function of cognition may ere long see the light.

at all, *this* is the fire you feel. As a matter of fact, whenever we constitute ourselves into psychological critics, it is not by dint of discovering which reality a feeling "resembles" that we find out which reality it means. We become first aware of which one it means, and then we suppose that to be the one it resembles. We see each other looking at the same objects, pointing to them and turning them over in various ways, and thereupon we hope and trust that all of our several feelings resemble the reality and each other. But this is a thing of which we are never theoretically sure. Still, it would practically be a case of *Grübelsucht*, if a ruffian were assaulting and drubbing my body, to spend much time in subtle speculation either as to whether his vision of our two bodies resembled mine, or as to whether the body he really *meant* to insult were not some body in his mind's eye, altogether other from my own. The practical point of view brushes such metaphysical cobwebs away. If what he have in mind be not *my* body, why call we it a body at all? His mind is inferred as a certain ejective term, to whose existence the things that happen in our two bodies point. The inference is quite void if the term, once inferred, be separated from its connexion with the two bodies that made me infer it, and connected with others that are no objects of mine at all. No matter for the metaphysical puzzle of how our two minds, the ruffian's and mine, *can* mean the same bodies. Men who see each other's bodies sharing the same space, treading the same earth, splashing the same water, making the same air resonant, and pursuing the same game and eating out of the same dish, will never practically believe in a pluralism of solipsistic worlds.

Where, however, the actions of one mind seem to take no effect in the world of the other, the case is different. This is what happens in poetry and fiction. Everyone knows *Ivanhoe*, for example; but so long as we stick to the story pure and simple without regard to the facts of its production, few would hesitate to admit that there are as many different "Ivanhoes" as there are different minds cognisant of the story.[6] The fact that all these "Ivanhoes"

[6] That is, there is no *real* "Ivanhoe," not even the one in Sir Walter Scott's mind as he was writing the story. That one is only the *first* one of the "Ivanhoe"-solipsisms. It is quite true we can *make* it the real "Ivanhoe" if we like, and then say that the other "Ivanhoes" know it or do not know it, according as they refer to and resemble it or no. This is done by bringing in Sir Walter Scott himself as the *author* of the real "Ivanhoe," and so making a complex object of both. This object, however, is not a story pure and simple. It has dynamic relations with the world common to the experience of all the readers. Sir Walter Scott's "Ivanhoe" got itself printed in volumes which we all can handle, and to any one of which we can refer to see which of our versions be the true one, *i.e.*, the original one of Scott himself. We can see the manuscript; in short we can get back to the "Ivanhoe" in Scott's mind by many an avenue and channel of this real world of our experience, – a thing we can by no means do with either the Ivanhoe or the Rebecca, either the Templar or the Isaac of York, of the story taken simply as such, and detached from

resemble each other does not prove the contrary. But if an alteration invented by one man in his version were to reverberate immediately through all the other versions, and produce changes therein, we should then easily agree that all these thinkers were thinking the *same* "Ivanhoe," and that, fiction or no fiction, it formed a little world common to them all.

Having reached this point, we may take up our thesis and improve it again. Still calling the reality by the name of *q* and letting the critic's feeling vouch for it, we can say that any other feeling will be held cognisant of *q*, provided it both resemble *q*, and refer to *q*, as shown by its either modifying *q* directly, or modifying some other reality, *p* or *r*, which the critic knows to be continuous with *q*. Or more shortly, thus: *The feeling of q knows whatever reality it resembles, and either directly or indirectly operates on.* If it resemble without operating, it is a dream; if it operate without resembling, it is an error.[7]

the conditions of its production. Everywhere, then, we have the same test: can we pass continuously from two objects in two minds to a third object which seems to be in *both* minds, because each mind feels every modification imprinted on it by the other? If so, the first two objects named are derivatives, to say the least, from the *same* third object, and may be held, if they resemble each other, to refer to one and the same reality.

[7] Among such errors are those cases in which our feeling operates on a reality which it does partially resemble, and yet does not intend: as for instance, when I take up your umbrella, meaning to take my own. I cannot be said here either to know your umbrella, or my own, which latter my feeling more completely resembles. I am mistaking them both, misrepresenting their context, &c.

We have spoken in the text as if the critic were necessarily one mind, and the feeling criticised another. But the criticised feeling and its critic may be earlier and later feelings of the same mind, and here it might seem that we could dispense with the notion of operating, to prove that critic and criticised are referring to and meaning to represent the *same*. We think we see our past feelings directly, and know what they refer to without appeal. At the worst, we can always fix the intention of our present feeling and *make* it refer to the same reality to which any one of our past feelings may have referred. So we need no "operating" here, to make sure that the feeling and its critic mean the same real *q*. Well, all the better if this is so! We have covered the more complex and difficult case in our text, and we may let this easier one go. The main thing at present is to stick to practical psychology, and ignore metaphysical difficulties.

One more remark. Our formula contains, it will be observed, nothing to correspond to the great principle of cognition laid down by Professor Ferrier in his *Institutes of Metaphysic* and apparently adopted by all the followers of Fichte, the principle, namely, that for knowledge to be constituted there must be knowledge of the knowing mind along with whatever else is known: not *q*, as we have supposed, but *q plus myself*, must be the least I can know. It is certain that the common sense of mankind never dreams of using any such principle when it tries to discriminate between conscious states that are knowledge and conscious states that are not. So that Ferrier's principle, if it have any relevancy at all, must have relevancy to the metaphysical possibility of consciousness at large, and not to the practically recognised constitution of cognitive consciousness. We may therefore pass it by without further notice here.

It is to be feared that the reader may consider this formula rather insignificant and obvious, and hardly worth the labour of so many pages, especially when he considers that the only cases to which it applies are *percepts,* and that the whole field of symbolic or conceptual thinking seems to elude its grasp. Where the reality is either a material thing or act, or a state of the critic's consciousness, I may both mirror it in my mind and operate upon it as soon as I perceive it. But there are many cognitions, universally allowed to be such, which neither mirror nor operate on their realities. As Reid says, "every man knows that he can relate the pain he suffered, not only without pain, but with pleasure; and that to suffer pain and think of it, are things which differ totally in kind and not in degree only."

In the whole field of symbolic thought we are universally held both to intend, to speak of, and to reach conclusions about – to know in short – particular realities, without having in our subjective consciousness any mind-stuff out of which an image of them might be framed. We are instructed about them by language which awakens no substantive consciousness beyond its sound; and we know *which* realities they are by the faintest and most fragmentary glimpse of some remote context they may have and by no direct imagination of themselves. As minds may differ here, let me speak in the first person. I am sure that my own current thinking has *words* for its almost exclusive subjective material, words which are made intelligible by being referred to some reality that lies beyond the horizon of direct consciousness, and of which I am only aware as of a *terminus* existing in a certain direction, to which the words might, but do not, lead. The *subject*, or *topic*, of the words is usually something *towards* which I mentally seem to pitch them in a backward way, almost as I might jerk my thumb over my shoulder to point at something, without looking round, if I were only entirely sure that it was there. The *upshot*, or *conclusion*, of the words is something towards which I seem to incline my head forwards, as if giving assent to its existence, though all my mind's eye catches sight of may be some tatter of an image connected with it, which tatter, however, if only endued with the feeling of familiarity and reality, makes me feel that the whole to which it belongs is rational and real, and fit to be let pass.

Here then is cognitive consciousness on a large scale, and yet what it knows, it hardly resembles in the least degree. The formula last laid down for our thesis must therefore be made more complete. We may now express it thus: *A Percept knows whatever reality it directly or indirectly operates on and resembles; a Conceptual Feeling, or Thought, refers to, and takes cognisance of,* [8] *a reality, whenever it actually or potentially terminates in a percept that operates on or resembles that reality.* The percept may be either sensation or sensorial idea; and when I say the thought must *terminate* in such a percept, I mean that it must

[8] Is an incomplete "thought about" that reality, that reality is its "topic," &c. See *Mind* XXXIII. 23.

be aware of the percept in one of those dim ways described in a former article,[9] that it must consciously look in the direction thereof, and ultimately be capable of leading up thereto, – by the way of practical experience, if the terminal feeling be a sensation; by the way of logical or habitual suggestion, if it be only an image in the mind.

Let an illustration make this plainer. I open the first book I take up, and read the first sentence that meets my eye: "Newton saw the handiwork of God in the heavens as plainly as Paley in the animal kingdom." I immediately look back and try to analyse the subjective state in which I rapidly apprehended this sentence as I read it. In the first place there was an obvious feeling that the sentence was intelligible and rational and related to the world of realities. There was also a sense of agreement or harmony between "Newton," "Paley," and "God." There was no apparent image connected with the words "heavens," or "handiwork," or "God"; they were words merely. With "animal kingdom" I think there was the faintest consciousness (it may possibly have been an image of the steps) of the Museum of Zoology in the town of Cambridge where I write. With "Paley" there was an equally faint consciousness of a small dark leather book; and with "Newton" a pretty distinct vision of the right-hand lower corner of a curling periwig. This is all the mind-stuff I can discover in my first consciousness of the meaning of this sentence, and I am afraid that even not all of this would have been present had I come upon the sentence in a genuine reading of the book, and not picked it out for an experiment. And yet my consciousness was truly cognitive. The sentence is "about realities" which my psychological critic – for we must not forget him – acknowledges to be such, even as he acknowledges my distinct feeling that they *are* realities, and my acquiescence in the general rightness of what I read of them, to be true knowledges on my part.

Now what justifies my critic in being as lenient as this? This singularly inadequate consciousness of mine, made up of symbols that neither resemble nor affect the realities they stand for, – how can he be sure it is cognisant of the very realities he has himself in mind?

He is sure because in countless like cases he has seen such inadequate and symbolic thoughts, by developing themselves, terminate in percepts that practically modified and presumably resembled his own. By "developing" themselves is meant obeying their tendencies, following up the suggestions nascently present in them, working in the direction in which they seem to point, clearing up the penumbra, making distinct the halo, unravelling the fringe, which is part of their composition, and in the midst of which their more substantive kernel of subjective content seems consciously to lie. Thus I may develop my thought in the Paley direction by procuring the brown leather volume and bringing the

[9] *Ibid.*, pp. 14–17, 19, 23–24.

passages about the animal kingdom before the critic's eyes. I may satisfy him that the words mean for me just what they mean for him, by showing him *in concreto* the very animals and their arrangements, of which the pages treat. I may get Newton's works and portraits; or if I follow the line of suggestion of the wig, I may smother my critic in seventeenth-century-matters pertaining to Newton's environment, to show that the word "Newton" has the same *locus* and relations in both our minds. Finally I may, by act and word, persuade him that what I mean by God and the heavens and the analogy of handiworks, is just what he means also.

My demonstration in the last resort is to his *senses*. My thought makes me act on his senses much as he might himself act on them, were he pursuing the consequences of a perception of his own. Practically then *my* thought terminates in *his* realities. He willingly supposes it, therefore, to be *of* them, and inwardly to *resemble* what his own thought would be, were it of the same symbolic sort as mine. And the pivot and fulcrum and support of his mental persuasion, is the sensible operation which my thought leads me, or may lead, to effect – the bringing of Paley's book, of Newton's portrait, &c., before his very eyes.

In the last analysis, then, we believe that we all know and think about and talk about the same world, because we believe our *percepts* are possessed by us in common. And we believe this because the percepts of each one of us seem to be changed in consequence of changes in the percepts of someone else. What you mean by me is in the first instance a percept of your own. Unexpectedly, however, I open and show you a book, uttering certain sounds the while. These acts are also your percepts, but they so resemble acts of yours with feelings prompting them, that you cannot doubt I have the feelings too, or that the book is one book felt in both our worlds. That it is felt in the same way, that my feelings of it resemble yours, is something of which we never can be sure, but which we assume as the simplest hypothesis that meets the case. As a matter of fact, we never *are* sure of it, and, as *Erkenntnisstheoretiker*, we can only say that of feelings that should *not* resemble each other, both could not know the same thing at the same time in the same way.[10] If each holds to its own percept as the reality, it is bound to say of the other percept, that, though it may *intend* that reality, and prove this by working change upon it, yet, if it do not resemble it, it is all false and wrong.[11]

If this be so of percepts, how much more so of higher modes of thought! Even in the sphere of sensation individuals are probably different enough.

[10] Though both might terminate in the same thing and be incomplete thoughts "about" it.

[11] The difference between Idealism and Realism is immaterial here. What is said in the text is consistent with either theory. A law by which my percept shall change yours directly is no more mysterious than a law by which it shall first change a reality, and then the reality change yours. In either case you and I seem knit into a continuous world, and not to form a pair of solipsisms.

Comparative study of the simplest conceptual elements seems to show a wider divergence still. And when it comes to general theories and emotional attitudes towards life, it is indeed time to say with Thackeray, "My friend, a different universe walks about under your hat and under mine."

What can save us at all and prevent us from flying asunder into a chaos of mutually repellent solipsisms? Through what can our several minds commune? Through nothing but the mutual *resemblance* of those of our feelings which have this strange power of modifying each other, *which are mere dumb knowledges-of-acquaintance*, and which must also resemble their realities or not know them aright at all. In such pieces of knowledge-of-acquaintance all our knowledge-about must end, and carry a sense of this possible termination as part of its content. These percepts, these *termini*, these sensible things, these mere matters-of-acquaintance, are the only realities we ever directly know, and the whole history of our thought is the history of our substitution of one of them for another, and the reduction of the latter to the status of a conceptual sign. Contemned though they be by some thinkers, these sensations are the mother-earth, the anchorage, the stable rock, the first and last limits, the *terminus a quo* and the *terminus ad quem* of the mind. To find such sensational *termini* should be our aim with all our higher thought. They end discussion; they destroy the false conceit of knowledge; and without them we are all at sea with each other's meaning. If two men act alike on a percept, they believe themselves to feel alike about it; if not, they may suspect they know it in differing ways. We can never be sure we understand each other till we are able to bring the matter to this test.[12] This is why metaphysical discussions are so much like fighting with the air; they have no practical issue of a sensational kind. "Scientific" theories, on the other hand, always terminate in definite percepts. You can deduce a possible sensation from your theory and, taking me into your laboratory, prove that your theory is true of my world by giving me the sensation then and there. Beautiful is the flight of conceptual reason through the upper air of truth. No wonder philosophers are dazzled by it still, and no wonder they look with some disdain at the low earth of feeling from which the goddess launched herself aloft. But woe to her if she return not home to its acquaintance; "*Nirgends haften dann die unsicheren Sohlen*": every crazy wind will take her, and, like a fire-balloon at night, she will go out among the stars.

[12] "There is no distinction of meaning so fine as to consist in anything but a possible difference of practice.... It appears, then, that the rule for attaining the [highest] grade of clearness of apprehension is as follows: Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object." Charles S. Peirce: "How to make our Ideas clear," in *Popular Science Monthly*, New York, January, 1878, p. 293.

THE PERCEPTION OF REALITY

William James, "The Perception of Reality." *The Principles of Psychology* (New York: Henry Holt, 1890), vol. 2, chap. 21, pp. 283–322.

BELIEF

Everyone knows the difference between imagining a thing and believing in its existence, between supposing a proposition and acquiescing in its truth. In the case of acquiescence or belief, the object is not only apprehended by the mind, but is held to have reality. Belief is thus the mental state or function of cognizing reality. As used in the following pages, 'Belief' will mean every degree of assurance, including the highest possible certainty and conviction.

There are, as we know, two ways of studying every psychic state. First, the way of analysis: What does it consist in? What is its inner nature? Of what sort of mind-stuff is it composed? Second, the way of history: What are its conditions of production, and its connection with other facts?

Into the first way we cannot go very far. *In its inner nature, belief or the sense of reality, is a sort of feeling more allied to the emotions than anything else.* Mr. Bagehot distinctly calls it the 'emotion' of conviction. I just now spoke of it as acquiescence. It resembles more than anything what in the psychology of volition we know as consent. Consent is recognized by all to be a manifestation of our active nature. It would naturally be described by such terms as 'willingness' or the 'turning of our disposition'. What characterizes both consent and belief is the cessation of theoretic agitation, though the advent of an idea which is inwardly stable, and fills the mind solidly to the exclusion of contradictory ideas. When this is the case, motor effects are apt to follow. Hence the states of consent and belief, characterized by repose on the purely intellectual side, are both intimately connected with subsequent practical activity. This inward stability of the mind's content is as characteristic of disbelief as of belief. But we shall presently see that we never disbelieve anything except for the reason that we believe something else which contradicts the first thing.[1] Disbelief is thus an incidental complication to belief, and need not be considered by itself.

[1] Compare this psychological fact with the corresponding logical truth that all negation rests on covert assertion of something else than the thing denied. (See Bradley's *Principles of Logic*, bk. 1. ch. 3.)

The true opposite of belief, psychologically considered, *are doubt and inquiry, not disbelief*. In both these states the content of our mind is in unrest, and the emotion engendered thereby is, like the emotion of belief itself, perfectly distinct, but perfectly indescribable in words. Both sorts of emotion may be pathologically exalted. One of the charms of drunkenness unquestionably lies in the deepening of the sense of reality and truth which is gained therein. In whatever light things may then appear to us, they seem more utterly what they are, more 'utterly utter' than when we are sober. This goes to a fully unutterable extreme in the nitrous oxide intoxication, in which a man's very soul will sweat with conviction, and he be all the while unable to tell what he is convinced of at all.[2] The pathological state opposed to this solidity and deepening has been called the questioning mania (*Grübelsucht* by the Germans). It is sometimes found as a substantive affection, paroxysmal or chronic, and consists in the inability to rest in any conception, and the need of having it confirmed and explained. 'Why do I stand here where I stand ?' 'Why is a glass a glass, a chair a chair?' 'How is it that men are only of the size they are? Why not as big as houses', etc., etc.[3] There is, it is true, another pathological state which is as far removed from doubt as from belief, and which some may prefer to consider the proper contrary of the latter state of mind. I refer to the feeling that everything is hollow, unreal, dead. I shall speak of this state again upon a later page. The point I wish to notice here is simply that belief and disbelief are but two aspects of one psychic state.

[2] See that very remarkable little work, *The Anaethetic Revelation and the Gist of Philosophy, by Benjamin P. Blood* (Amsterdam, N.Y., 1874). Compare also *Mind*, VII, 206.

[3] "To one whose mind is healthy thoughts come and go unnoticed, with me they have to be faced, thought about in a peculiar fashion, and then disposed of as finished, and this often when I am utterly wearied and would be at peace; but the call is imperative. This goes on to the hindrance of all natural action. If I were told that the staircase was on fire and I had only a minute to escape, and the thought arose – 'Have they sent for fire-engines? Is it probable that the man who has the key is at hand. Is the man a careful sort of person? Will the key be hanging on a peg? Am I thinking rightly? Perhaps they don't lock the depot.' My foot would be lifted to go down. I should be conscious to excitement that I was losing my chance – but I should be unable to stir, until all these absurdities were entertained and disposed of. In the most critical moments of my life, when I ought to have been so *engrossed as to leave no room for any secondary thoughts*, I have been oppressed by the inability to be at peace. And in the most ordinary circumstances it is all the same. Let me instance the other morning I went to walk. The day was biting cold, but1 was unable to proceed except by jerks. Once I got arrested – my feet in a muddy pool. One foot was lifted to go, knowing that it was not good to be standing in water, but there I was fast, the cause of detention being the discussing with myself the reasons why I should not stand in that pool." (T. S. Clouston: Clinical Lectures on Mental Diseases, 1883, p. 43. See also Berger, in *Archiv für Psychiatrie*, VI, 217.)

John Mill, reviewing various opinions about belief, comes to the conclusion that no account of it can be given:

> "What," he says "is the difference *to our minds* between thinking of a reality, and representing to ourselves an imaginary picture? I confess I can see no escape from the opinion that the distinction is ultimate and primordial. There is no more difficulty in holding it to be so, than in holding the difference between a sensation and an idea to be primordial. It seems almost another aspect of the same difference. ... I cannot help thinking, therefore, that there is in the remembrance of a real fact, as distinguished from that of a thought, an element which does not consist ... in a difference between the mere ideas which are present to the mind in the two cases. This element, howsoever we define it, constitutes Belief, and is the difference between Memory and Imagination. From whatever direction we approach, this difference seems to close our path. When we arrive at it, we seem to have reached, as it were, the central point of our intellectual nature, presupposed and built upon in every attempt we make to explain the more recondite phenomena of our mental being."[4]

If the words of Mill be taken to apply to the mere subjective analysis of belief – to the question, What does it feel like when we have it? – they must be held, on the whole, to be correct. Belief, the sense of reality, feels like itself – that is about as much as we can say.

Prof. Brentano, in an admirable chapter of his *Psychologie*, expresses this by saying that conception and belief (which he names *judgment*) are two different fundamental psychic phenomena. What I myself have called (Vol. I, p. 276) the 'object' of thought may be comparatively simple, like "Ha! what a pain," or "It-thunders"; or it may be complex, like "Columbus-discovered-America-in-1492," or "There-exists-an-all-wise-Creator-of-the-world." In either case, however, the mere thought of the object may exist as something quite distinct from the belief in its reality. The belief, as Brentano says, presupposes the mere thought:

> "Every object comes into consciousness in a twofold way, as simply thought of [*vorgestellt*] and as admitted [*anerkaant*] or denied. The relation is analogous to that which is assumed by most philosophers (by Kant no less than by Aristotle) to obtain between mere thought and desire. Nothing is ever desired without being thought of; but the desiring is nevertheless a second quite new and peculiar form of relation to the object, a second quite new way of receiving it into consciousness. No

[4] Note to James Mill's analysis, I, 412–423.

> more is anything judged [i.e., believed or disbelieved] which is not thought of too. But we must insist that, so soon as the object of a thought becomes the object of an assenting or rejecting judgment, our consciousness steps into an entirely new relation towards it. It is then twice present in consciousness, as thought of, and as held for real or denied; just as when desire awakens for it, it is both thought and simultaneously desired." (P. 266.)

The commonplace doctrine of 'judgment' is that it consists in the combination of 'ideas' by a 'copula' into a 'proposition', which may be of various sorts, as a formative, negative, hypothetical, etc. But who does not see that in a disbelieved or doubted or interrogative or conditional proposition, the ideas are combined in the same identical way in which they are in a proposition which is solidly believed? *The way in which the ideas are combined is a part of the inner constitution the thought's object or content.* That object is sometimes an articulated whole with relations between its parts, amongst which relations, that of predicate to subject may be one. But when we have got our object with its inner constitution thus defined in a proposition, then the question comes up regarding the object as a whole: 'Is it a real object? is this proposition a true proposition or not?' And in the answer *Yes* to *this* question lies that new psychic act which Brentano calls 'judgment', but which I prefer to call 'belief'.

In every proposition, then, so far as it is believed, questioned, or disbelieved, four elements are to be distinguished, the subject, the predicate, and their relation (of whatever sort it be) – these form the *object* of belief – and finally the psychic attitude in which our mind stands towards the proposition taken as a whole – and this is the belief itself.[5]

Admitting, then, that this attitude is a state of consciousness *sui generis*, about which nothing more can be said in the way of internal analysis, let us proceed to the second way of studying the subject of belief: *Under what circumstances do we think things real?* We shall soon see how much matter this gives us to discuss.

THE VARIOUS ORDERS OF REALITY.

Suppose a new-born mind, entirely blank and waiting for experience to begin. Suppose that it begins in the forms of visual impression (whether faint or vivid is immaterial) of a lighted candle against a dark background, and nothing else, so that whilst this image lasts it constitutes the entire universe

[5] For an excellent account of the history of opinion on this subject see A. Marty, in *Vierteljahrsschrift für wissenschaftliche Philosophie*, VIII, 161 ff. (1884).

known to the mind in question. Suppose, moreover (to simplify the hypothesis), that the candle is only imaginary, and that no 'original' of it is recognized by us psychologists outside. Will this hallucinatory candle be believed in, will it have a real existence for the mind?

What possible sense (for that mind) would a suspicion have that the candle was not real? What would doubt or disbelief of it imply? When *we*, the onlooking psychologists, say the candle is unreal, we mean something quite definite, viz., that there is a world known to *us* which is real, and to which we perceive that the candle does not belong; it belongs exclusively to that individual mind, has no *status* anywhere else, etc. It exists, to be sure, in a fashion, for it forms the content of that mind's hallucination; but the hallucination itself, though unquestionably it is a sort of existing fact, has no knowledge of *other* facts; and since those *other* facts are the realities *par excellence* for us, and the only things we believe in, the candle is simply outside of our reality and belief altogether.

By the hypothesis, however, the *mind which sees the candle* can spin no such considerations as these about it, for of other facts, actual or possible, it has no inkling whatever. That candle is its all, its absolute. Its entire faculty of attention is absorbed by it. It *is*, it is *that*; it is *there*; no other possible candle, or quality of this candle, no other possible place, or possible object in the place, no alternative, in short, suggests itself as even conceivable; so how can the mind help believing the candle real? The supposition that it might possibly not do so is, under the supposed conditions, unintelligible.[6]

This is what Spinoza long ago announced:

> "Let us conceive a boy," he said, "imagining to himself a horse, and taking note of nothing else. As this imagination involves the existence of the horse, *and the boy has no perception which annuls its resistance*, he will necessarily contemplate the horse as present, nor will he be able to doubt of its existence, however little certain of it he may be. I deny that a man in so far as he imagines [*percipit*] affirms nothing. For what is it to imagine a winged horse but to affirm that, the horse [that horse, namely] has wings? For if the mind had nothing before it but the winged horse it would contemplate the same as present, would have no cause to doubt of its existence, nor any power of dissenting from its existence, unless the imagination of the winged horse were joined to an idea which contradicted [*tollit*] its existence." (*Ethics*, II, 49, Scholium.)

[6] We saw near the end of Chapter XIX that a candle-image taking exclusive possession of the mind in this way would probably acquire the sensational vividness. But this physiological accident is logically immaterial to the argument in the text, which ought to apply as well to the dimmest sort of mental image as to the brightest sensation.

The sense that anything we think of is unreal can only come, then, when that thing is contradicted by some other thing of which we think. *Any object which remains uncontradicted is ipso facto believed and posited as absolute reality.*

Now, how comes it that one thing thought of can be contradicted by another? It cannot unless it begins the quarrel by saying something inadmissible about that other. Take the mind with the candle, or the boy with the horse. If either of them say, "That candle or that horse, even when I don't see it, exists in *the outer world*," he pushes into 'the outer world' an object which may be incompatible with everything which he otherwise knows of that world. If so, he must take his choice of which to hold by, the present perceptions or the other knowledge of the world. If he holds to the other knowledge, the present perceptions are contradicted, *so far as their relation to that world goes*. Candle and horse, whatever they may be, are not existents in outward space. They are existents, of course; they are mental objects; mental objects have existence as mental objects. But they are situated in their own spaces, the space in which they severally appear, and neither of those spaces is the space in which the realities called 'the outer world' exist.

Take again the horse with wings. If I merely dream of a horse with wings, my horse interferes with nothing else and has not to be contradicted. That horse, its wings, and its place, are all equally real. That horse exists no otherwise than as winged, and is moreover really there, for that place exists no otherwise than as the place of that horse, and claims as yet no connection with the other places of the world. But if with this horse I make an inroad into the *world otherwise known*, and say, for example, "That is my old mare Maggie, having grown a pair of wings where she stands in her stall," the whole case is altered; for now the horse and place are identified with a horse and place otherwise known, and *what* is known of the latter objects is incompatible with what is perceived with the former. "Maggie in her stall with wings! Never!" The wings are unreal, then, visionary. I have dreamed a lie about Maggie in her stall.

The reader will recognize in these two cases the two sorts of judgment called in the logic-books existential and attributive respectively. 'The candle exists as an outer reality' is an existential, 'My Maggie has got a pair of wings' is an attributive, proposition;[7] and it follows from what was first said that *all*

[7] In both existential and attributive judgments a synthesis is represented. The syllable *ex* in the word Existence, *da* in the word *Dasein*, express it. 'The candle exists' is equivalent to 'The candle is *over there*'. And the 'over there' means real space, space related to other reals. The proposition amounts to saying: 'The candle is in the same space with other reals'. It affirms of the candle a very concrete predicate – namely, this relation to other particular concrete things. *Their* real existence, as we shall later see, resolves itself into their peculiar relation to *ourselves*. Existence is thus no substantive quality when we predicate it of any object; it is a relation, ultimately terminating in ourselves, and at the

propositions, whether attributive or existential, are believed through the very fact of being conceived, unless they clash with other propositions believed at the same time, by affirming that their terms are the same with the terms of these other propositions. A dream-candle has existence, true enough; but not the same existence (existence for itself, namely, or *extra mentem meam*) which the candles of waking perception have. A dream-horse has wings; but then neither horse nor wings are the same with any horses or wings known to memory. That we can at any moment think of the same thing which at any former moment we thought of is the ultimate law of our intellectual constitution. But when we now think of it incompatibly with our other ways of thinking it, then we must choose which way to stand by, for we cannot continue to think in two contradictory ways at once. *The whole distinction of real and unreal, the whole psychology of belief, disbelief, and doubt, is thus grounded on two mental facts – first, that we are liable to think differently of the same; and second, that when we have done so, we can choose which way of thinking to adhere to and which to disregard*.

The subjects adhered to become real subjects, the attributes adhered to real attributes, the existence adhered to real existence; whilst the subjects disregarded become imaginary subjects, the attributes disregarded erroneous it attributes, and the existence disregarded an existence into no man's land, in the limbo "where footless fancies dwell." The real things are, in Mr. Taine's terminology, the *reductives* of the things judged unreal.

THE MANY WORLDS

Habitually and practically we do not *count* these disregarded things as existents at all. For them *Vae victis* is the law in the popular philosophy; they are not even treated as appearances; they are treated as if they were mere waste, equivalent to nothing at all. To the genuinely philosophic mind, however, they still have existence, though not the same existence, as the real things. *As* objects of fancy, *as* errors, *as* occupants of dreamland, etc., they are in their way as indefeasible parts of life, as undeniable features of the Universe, as the realities are in their way. The total world of which the philosophers must take account is thus composed of the realities *plus* the fancies and illusions.

Two sub-universes, at least, connected by relations which philosophy tries to ascertain! Really there are more than two sub-universes of which we take account, some of us of this one, and others of that. For there are various categories both of illusion and of reality, and alongside of the world of

moment when it terminates, becoming a *practical* relation. But of this more anon. I only wish now to indicate the superficial nature of the distinction between the existential and the attributive proposition.

absolute error (i.e., error confined to single individuals) but still within the world of absolute reality (i.e., reality believed by the complete philosopher) there is the world of collective error, there are the worlds of abstract reality, of relative or practical reality, of ideal relations, and there is the supernatural world. The popular mind conceives of all these sub-worlds more or less discontentedly; and when dealing with one of them, forgets for the time being its relations to the rest. The complete philosopher is he who seeks not only to assign to every given object of his thought its right place in one or other of these sub-worlds, but he also seeks to determine the relation of each sub-world to the others in the total world which *is*.

The most important sub-universes commonly discriminated from each other and recognized by most of us as existing, each with its own special and separate style of existence, are the following:

(1) The world of sense, or of physical 'things' as we instinctively apprehend them, with such qualities as heat, color, and sound, and such 'forces' as life, chemical affinity, gravity, electricity, all existing as such within or on the surface of the things.

(2) The world of science, or of physical things as the learned conceive them, with secondary qualities and 'forces' (in the popular sense) excluded, and nothing real but solids and fluids and their 'laws' (i.e., customs) of motion.[8]

(3) The world of ideal relations, or abstract truths believed or believable by all, and expressed in logical, mathematical, metaphysical, ethical, or aesthetic propositions.

(4) The world of 'idols of the tribe', illusions or prejudices common to the race. All educated people recognize these as forming one sub-universe. The motion of the sky round the earth, for example, belongs to this world. That motion is not a recognized item of any of the other worlds; but as an 'idol of the tribe' it really exists. For certain philosophers 'matter' exists only as an idol of the tribe. For science, the 'secondary qualities' of matter are but 'idols of the tribe'.

(5) The various supernatural worlds, the Christian heaven and hell, the world of the Hindoo mythology, the world of Swedenborg's *visa et audita*, etc. Each of these is a consistent system, with definite relations among its own parts. Neptune's trident, e.g., has no status of reality whatever in the Christian heaven; but within the classic Olympus certain definite things are true of it, whether one believe in the reality of the classic mythology as a whole or not. The various worlds of deliberate fable may be ranked with these worlds of faith – the world of the *Iliad*, that of *King Lear*, of the *Pickwick Pacers*, etc.[9]

[8] I define the scientific universe here in the radical mechanical way. Practically, it is oftener thought of in a mongrel way and resembles in more points the popular physical world.

[9] It thus comes about that we can say such things as that Ivanhoe did not *really* marry Rebecca, as Thackeray *falsely* makes him do. The real Ivanhoe-world is the one in which

(6) The various worlds of individual opinion, as numerous as men are.

(7) The worlds of sheer madness and vagary, also indefinitely numerous.

Every object we think of gets at last referred to one world or another of this or of some similar list. It settles into our belief as a common-sense object, a scientific object, an abstract object, a mythological object, an object of some one's mistaken conception, or a madman's object; and it reaches this state sometimes immediately, but often only after being hustled and bandied about amongst other objects until it finds some which will tolerate its presence and stand in relations to it which nothing contradicts. The molecules and ether-waves of the scientific world, for example, simply kick the object's warmth and color out, they refuse to have any relations with them. But the world of 'idols of the tribe' stands ready to take them in. Just so the world of classic myth takes up the winged horse; the world of individual hallucination, the vision of the candle; the world of abstract truth, the proposition that justice is kingly, though no actual king be just. The various worlds themselves, however, appear (as aforesaid) to most men's minds in no very definitely conceived relation to each other, and our attention, when it turns to one, is apt to drop the others for the time being out of its account. Propositions concerning the different worlds are made from 'different points of view'; and in this more or less chaotic state the consciousness of most thinkers remains to the end. Each world *whilst it is attended to* is real after its own fashion; only the reality lapses with the attention.

THE WORLD OF 'PRACTICAL REALITIES'

Each thinker, however, has dominant habits of attention; and these *practically elect from among the various worlds some one to be for him the world of ultimate realities*. From this world's objects he does not appeal. Whatever positively contradicts them must get into another world or die. The horse, e.g., may have wings to its heart's content, so long as it does not pretend to be the real world's horse – *that* horse is absolutely wingless. For most men, as we shall immediately see, the 'things of sense' hold this prerogative position, and are the absolutely real world's nucleus. Other things, to be sure, may be real for this man or for that – things of science, abstract moral relations, things of the Christian theology, or what not. But even for the special man, these things are usually real with a less real reality than that of the things of sense. They are taken

Scott wrote down for us. *In that world* Ivanhoe does *not* marry Rebecca. The objects within that world are knit together by perfectly definite relations, which can be affirmed or denied. Whilst absorbed in the novel, we turn our backs on all other worlds, and, for the time, the Ivanhoe-world remains our absolute reality. When we wake from the spell, however, we find a still more real world, which reduces Ivanhoe, and all things connected with him, to the fictive status, and relegates them to one of the sub-universes grouped under No. 5.

less seriously; and the very utmost that can be said for anyone's belief in them is that it is as strong as his 'belief in his own senses'.[10]

In all this the everlasting partiality of our nature shows itself, our inveterate propensity to choice. For, in the strict and ultimate sense of the word existence, everything which can be thought of at all exists as *some* sort of object, whether mythical object, individual thinker's object, or object in outer space and for intelligence at large. Errors, fictions, tribal beliefs, are parts of the whole great Universe which God has made, and He must have meant all these things to be in it, each in its respective place. But for us finite creatures, "'tis to consider too curiously to consider so." The mere fact of appearing as an object at all is not enough to constitute reality. That may be metaphysical reality, reality for God; but what we need is practical reality, reality for ourselves; and, to have that, an object must not only appear, but it must appear both *interesting* and *important*. The worlds whose objects are neither interesting nor important we treat simply negatively, we brand them as *un*real.

In the relative sense, then, the sense in which we contrast reality with simple unreality, and in which one thing is said to have *more* reality than another, and to be more believed, *reality means simply relation to our emotional and active life*. This is the only sense which the word ever has in the mouths of practical men. *In this sense, whatever excites and stimulates our interest is real*; whenever an object so appeals to us that we turn to it, accept it, fill our mind with it, or practically take account of it, so far it is real for us, and we believe it. Whenever, on the contrary, we ignore it, fail to consider it or act upon it, despise it, reject it, forget it, so far it is unreal for us and disbelieved. Hume's account of the matter was then essentially correct, when he said that belief in anything was simply the having the idea of it in a lively and active manner:

[10] The world of dreams is our real world whilst we are sleeping, because our attention then lapses from the sensible world. Conversely, when we wake the attention usually lapses from the dream-world and that becomes unreal. But if a dream haunts us and compels our attention during the day it is very apt to remain figuring in our consciousness as a sort of sub-universe alongside of the waking world. Most people have probably had dreams which it is hard to imagine not to have been glimpses into an actually existing region of being, perhaps a corner of the 'spiritual world'. And dreams have accordingly in all ages been regarded as revelations, and have played a large part in furnishing forth mythologies and creating themes for faith to lay hold upon. The 'larger universe', here, which helps us to believe both in the dream and in the waking reality which is its immediate reductive, is the *total* universe, of Nature *plus* the Super-natural. The dream holds true, namely, in one half of that universe; the waking perceptions in the other half. Even to-day dream-objects figure among the realities in which some 'psychic-researchers' are seeking to rouse our belief. All our theories, not only those about the supernatural, but our philosophic and scientific theories as well, are like our dreams in rousing such different degrees of belief in different minds.

> "I say, then, that belief is nothing but a more vivid, lively, forcible, firm, steady conception of an object than the imagination alone is ever able to attain. ... It consists not in the peculiar nature or order of the ideas, but in the *manner* of their conception and in their *feeling* to the mind. I confess, that it is impossible perfectly to explain this feeling or manner of conception.... Its true and proper name ... is *belief*; which is a term, that everyone sufficiently understands in common life. And in philosophy, we can go no farther than assert, that *belief* is something felt by the mind, which distinguishes the idea of the judgment from the fictions of the imagination.[11] It gives them more weight and influence; makes them appear of greater importance; enforces them in the mind; gives them a superior influence on the passions, and renders them the governing principle of our actions."[12]

Or as Prof. Bain puts it: "In its essential character, belief is a phase of our active nature – otherwise called the Will."[13]

The object of belief, then, reality or real existence, in something quite different from all the other predicates which a subject may possess. Those are properties intellectually or sensibly intuited. When we add any one of them to the subject, we increase the intrinsic content of the latter, we enrich its picture in our mind. But adding reality does not enrich the picture in any such inward way; it leaves it inwardly as it finds it, and only fixes it and stamps it in to *us*.

> "The real," as Kant says, "contains no more than the possible. A hundred real dollars do not contain a penny more than a hundred possible dollars.... By whatever, and by however many, predicates I may think a thing, nothing is added to it if I add that the thing exists. ... Whatever, therefore, our concept of an object may contain, we must always step outside of it, in order to attribute to it existence."[14]

The 'stepping outside' of it is the establishment either of immediate practical relations between it and ourselves, or of relations between it and other objects with which we have immediate practical relations. Relations of this sort, which are as yet not transcended or superseded by others, are *ipso facto* real relations,

[11] Distinguishes realities from unrealities. the essential from the rubbishy and neglectable.

[12] *Inquiry Concerning Human Understanding*, sec. v, pt. 2 (slightly transposed in my quotation).

[13] Note to James Mill's *Analysis*, I. 394.

[14] *Critique of Pure Reason*, trans. Müller, II, 515–16. Hume also: "When, after the simple conception of any thing we would conceive it as existent, we in reality make no addition to, or alteration of, our first idea. Thus when we affirm, that God is existent, we simply form the idea of such a being as he is represented to us; nor is the existence, which we

and confer reality upon their objective term. *The fons et origo of all reality, whether from the absolute or the practical point of view, is thus subjective, is ourselves*. As bare logical thinkers, without emotional reaction, we give reality to whatever objects we think of, for they are really phenomena, or objects of our pausing thought, if nothing more. But, *as thinkers with emotional reaction, we give what seems to be a still higher degree of reality to whatever things we select and emphasize and turn to* WITH A WILL. These are our *living* realities; and not only these, but all the other things which are intimately connected with these. Reality, starting from our Ego, thus sheds itself from point to point – first, upon all objects which have an immediate sting of interest for our Ego in them, and next, upon the objects most continuously related with these. It only fails when the connecting thread is lost. A whole system may be real, if it only hang to our Ego by one immediately *stinging* term. But what contradicts any such stinging term, even though it be another stinging term itself, is either not believed, or only believed after settlement of the dispute.

We reach thus the important conclusion that *our own reality, that sense of our own, life which we at every moment possess, is the ultimate of ultimates for our belief*. 'As sure as I exist!' – this is our uttermost warrant for the being of all other things. As Descartes made the indubitable reality of the *cogito* go bail for the reality of all that the cogito involved, so we all of us, feeling our own present reality with absolutely coercive force, ascribe an all but equal degree of reality, first to whatever things we lay hold on with a sense of personal need, and second, to whatever farther things continuously belong with these. "Mein Jetzt und Hier," as Prof. Lipps says, "ist der letzte Angelpunkt für alle Wirklichkeit, also alle Erkenntniss."

The world of living realities as contrasted with unrealities is thus anchored in the Ego, considered as an active and emotional term.[15] That is the hook from which the rest dangles, the absolute support. And as from a painted hook it has been said that one can only hang a painted chain, so conversely, from a real hook only a real chain can properly be hung. *Whatever things have intimate and continuous connection with my life are things of whose reality I cannot doubt*. Whatever things fail to establish this connection are things which are practically no better for me than if they existed not at all.

> attribute to him, conceived by a particular idea, which we join to his other qualities, and can again separate and distinguish from them.... The belief of the existence joins no new idea to those, which compose the ideas of the object. When I think of God, when I think of Him as existent, and when I believe him to be existent, my idea of him neither increases nor diminishes. But as 'tis certain there is a great difference betwixt the simple conception of the existence of an object, and the belief of it, and as this difference lies not in the facts or compositions of the idea, which we conceive; it follows, that it must lie in the *manner*, in which we conceive it." (*Treatise of Human Nature*, pt. 3, sec. 7.)

[15] I use the notion of the Ego here, as common-sense uses it. Nothing is prejudged as to the results (or absence of results) of ulterior attempts to analyze the notion.

In certain forms of melancholic perversion of the sensibilities and reactive powers, nothing touches us intimately, rouses us, or wakens natural feeling. The consequence is the complaint so often heard from melancholic patients, that nothing is believed in by them as it used to be, and that all sense of reality is fled from life. They are sheathed in india-rubber; nothing penetrates to the quick or draws blood, as it were. According to Griesinger, "I see, I hear!" such patients say, "but the objects do not reach me, it is as if there were a wall between me and the outer world!"

> "In such patients there often is an alteration of the cutaneous sensibility, such that things feel indistinct or sometimes rough and woolly. But even were this change always present, it would not completely explain the psychic phenomenon ... which reminds us more of the alteration in our psychic relations to the outer world which advancing age on the one hand, and on the other emotions and passions, may bring about. In childhood we feel ourselves to be closer to the world of sensible phenomena, we lire immediately with them and in them; an intimately vital tie binds us and them together. But with the ripening of reflection this tie is loosened, the warmth of our interest cools, things look differently to us, and we act more as foreigners to the outer world, even though we know it a great deal better. Joy and expansive emotions in general draw it nearer to us again. Everything makes a more lively impression, and with the quick immediate return of this warm receptivity for sense-impressions, joy makes us feel young again. In depressing emotions it is the other way. Outer things, whether living or inorganic, suddenly grow cold and foreign to us, and even our favorite objects of interest feel as if they belonged to us no more. Under these circumstances, receiving no longer from anything a lively impression, we cease to turn towards outer things, and the sense of inward loneliness grows upon us. ... Where there is no strong intelligence to control this *blasé* condition, this psychic coldness and lack of interest, the issue of these states in which all seems so cold and hollow, the heart dried up, the world grown dead and empty, is often suicide or the deeper forms of insanity.[16]

THE PARAMOUNT REALITY OF SENSATIONS

But now we are met by questions of detail. What does this stirring, this exciting power, this interest, consist in, which some objects have? which are

[16] Griesinger, *Die Pathologie und Therapie der psychischen Krankheiten*, §§50, 98. See also Lotze: *Medicinische Psychologie*, p. 251. The neologism we so often hear, that an experience 'gives us a *realizing sense*' of the truth of some proposition or other, illustrates the dependence of the sense of reality upon *excitement*. Only what stirs us is 'realized'.

those 'intimate relations' with our life which give reality? And what things stand in these relations immediately, and what others are so closely connected with the former that (in Hume's language) we 'carry our disposition' also on to them?

In a simple and direct way these questions cannot be answered at all. The whole history of human thought is but an unfinished attempt to answer them. For what have men been trying to find out, since men were men, but just those things: "Where do our true interests lie – which relations shall we call the intimate and real ones – which things shall we call living realities and which not?" A few psychological points can, however, be made clear.

Any relation to our mind at all, in the absence of a stronger relation, suffices to make an object real. The barest appeal to our attention is enough for that. Revert to the beginning of the chapter, and take the candle entering the vacant mind. The mind was waiting for just some such object to make its spring upon. It makes its spring and the candle is believed. But when the candle appears at the same time with other objects, it must run the gauntlet of their rivalry, and then it becomes a question which of the various candidates for attention shall compel belief. As a rule we believe as much as we can. We would believe everything if we only could. When objects are represented by us quite unsystematically they conflict but little with each other, and the number of them which in this chaotic manner we can believe is limitless. The primitive savage's mind is a jungle in which hallucinations, dreams, superstitions, conceptions, and sensible objects all flourish alongside of each other, unregulated except by the attention turning in this way or in that. The child's mind is the same. It is only as objects become permanent and their relations fixed that discrepancies and contradictions are felt and must be settled in some stable way. As a rule, the success with which a contradicted object maintains itself in our belief is proportional to several qualities which it must possess. Of these the one which would be put first by most people, because it characterizes objects of sensation, is its –

(1) Coerciveness over attention, or the mere power to possess consciousness: then follow –

(2) Liveliness, or sensible pungency, especially in the way of exciting pleasure or pain;

(3) Stimulating effect upon the will, i.e., capacity to arouse active impulses, the more instinctive the better;

(4) Emotional interest, as object of love, dread, admiration, desire, etc.;

(5) Congruity with certain favorite forms of contemplation – unity, simplicity, permanence, and the like;

(6) Independence of other causes, and its own causal importance.

These characters run into each other. Coerciveness is the result of liveliness or emotional interest. What is lively and interesting stimulates *eo ipso* the will; congruity holds of active impulses as well as of contemplative forms; causal

independence and importance suit a certain contemplative demand, etc. I will therefore abandon all attempt at a formal treatment, and simply proceed to make remarks in the most convenient order of exposition.

As a whole, sensations are more lively and are judged more real than conceptions; things met with every hour more real than things seen once; attributes perceived when awake, more real than attributes perceived in a dream. But, *owing to the diverse relations contracted by the various objects with each other*, the simple rule that the lively and permanent is the real is often enough disguised. A conceived thing may be deemed more real than a certain sensible thing, if it only be intimately related to other sensible things more vivid, permanent, or interesting than the first one. Conceived molecular vibrations, e.g., are by the physicist judged more real than felt warmth, because so intimately related to all those other facts of motion in the world which he has made his special study. Similarly, a rare thing may be deemed more real than a permanent thing if it be more widely related to other permanent things. All the occasional crucial observations of science are examples of this. A rare experience, too, is likely to be judged more real than a permanent one, if it be more interesting and exciting. Such is the sight of Saturn through a telescope; such are the occasional insights and illuminations which upset our habitual ways of thought.

But no mere floating conception, no mere disconnected rarity, ever displaces vivid things or permanent things from our belief. A conception, to prevail, must *terminate* in the world of orderly sensible experience. A rare phenomenon, to displace frequent ones, must belong with others more frequent still. The history of science is strewn with wrecks and ruins of theory – essences and principles, fluids and forces – once fondly clung to, but found to hang together with no facts of sense. And exceptional phenomena solicit our belief in vain until such time as we chance to conceive them as of kinds already admitted to exist. What science means by 'verification' is no more than this, that no object of conception shall be believed which sooner or later has not some permanent and vivid object of sensation for its *term*. Compare what was said on pages 653–657 [insert correct pages], above.

Sensible objects are thus either our realities or the tests of our realities. Conceived objects must show sensible effects or else be disbelieved. And the effects, even though reduced to relative unreality when their causes come to view (as heat, which molecular vibrations make unreal), are yet the things on which our knowledge of the causes rests. Strange mutual dependence this, in which the appearance needs the reality in order to exist, but the reality needs the appearance in order to be known!

Sensible vividness or pungency is then the vital factor in reality when once the conflict between objects, and the connecting of them together in the mind, has begun. No object which neither possesses this vividness in its own right nor is able to borrow it from anything else has a chance of making

headway against vivid rivals, or of rousing in us that reaction in which belief consists. On the vivid objects we *pin*, as the saying is, our faith in all the rest; and our belief returns instinctively even to those of them from which reflection has led it away. Witness the obduracy with which the popular world of colors, sounds, and smells holds its own against that of molecules and vibrations. Let the physicist himself but nod, like Homer, and the world of sense becomes his absolute reality again.[17]

That things originally devoid of this stimulating power should be enabled, by association with other things which have it, to compel our belief as if they had it themselves, is a remarkable psychological fact, which since Hume's time it has been impossible to overlook.

> "The vividness of the first conception," he writes, "diffuses itself along the relations and is convey'd, as by so many pipes or channels, to every idea that has any communication with the primary one.... Superstitious people are fond of the relicks of saints and holy men, for the same reason that they seek after types and images, in order to inliven their devotion and give them a more intimate and strong conception of those exemplary lives. ... Now, 'tis evident one of the best relicks a devotee cou'd procure wou'd be the handiwork of a saint, and if his clothes and furniture are ever to be consider'd in this light, 'tis because they were once at his disposal, and were mov'd and affected by him; in which respect they are ... connected with him by a shorter train of consequences than any of those from which we learn the reality of his existence. This phenomenon clearly proves that a present impression, with a relation of causation, may enliven any idea, and consequently produce belief or assent, according to the precedent definition of it. ... It has been remark'd among the

[17] The way in which sensations are pitted against systematized conceptions, and in which the one or the other then prevails according as the sensations are felt by ourselves or merely known by report, is interestingly illustrated at the present day by the state of public belief about 'spiritualistic' phenomena. There exist numerous narratives of movement without contact on the part of articles of furniture and other material objects, in the presence of certain privileged individuals called mediums. Such movement violates our memories, and the whole system of accepted physical 'science'. Consequently those who have not seen it either brand the narratives immediately as lies or call the phenomena 'illusions' of sense, produced by fraud or due to hallucination. But one who has actually seen such a phenomenon, under what seems to him sufficiently 'test-conditions', will hold to his sensible experience through thick and thin, even though the whole fabric of 'science' should be rent in twain. That man would be a weak-spirited creature indeed who should allow any-blown generalities about 'the liability of the senses to be deceived' to bully him out of his adhesion to what for him was an indubitable experience of sight. A man may err in this obstinacy, sure enough, in any particular case. But the spirit that animates him is that on which ultimately the very life and health of Science rest.

> *Mahometans* as well as *Christians* that those *pilgrims* who have seen Mecca or the Holy Land, are ever after more faithful and zealous believers, than those who have not had that advantage. A man, whose memory presents him with a lively image of the *Red Sea and the Desert and Jerusalem and Galilee* can never doubt of any miraculous events which are related either by *Moses or the Evangelists*. The lively idea of the places passes by an easy transition to the facts which are suppos'd to have been related to them by contiguity, and increases the belief by increasing the vivacity of the conception. The remembrance of those fields and rivers has the same influence as a new argument.... The ceremonies of the *Catholic* religion may be consider'd as instances of the same nature. The devotees of that strange superstition usually plead in excuse for the mummeries, with which they are upbraided, that they feel the good effect of external motions, and postures, and actions, in enlivening their devotion and quickening their fervor, which otherwise wou'd decay away, if directed entirely to distant and immaterial objects. We shadow out the objects of our faith, say they, in sensible types and images, and render them more present to us by the immediate presence of these types than 'tis possible for us to do, merely by an intellectual view and contemplation."[18]

Hume's cases are rather trivial; and the things which associated sensible objects make us believe in are supposed by him to be unreal. But all the more manifest for that is the fact of their psychological influence. Who does not 'realize' more the fact of a dead or distant friend's existence, at the moment when a portrait, letter, garment or other material reminder of him is found? The whole notion of him then grows pungent and speaks to us and shakes us, in a manner unknown at other times. In children's minds, fancies and realities live side by side. But however lively their fancies may be, they still gain help from association with reality. The imaginative child identifies its *dramatis personae* with some doll or other material object, and this evidently solidifies belief, little as it may resemble what it is held to stand for. A thing not too interesting by its own real qualities generally does the best service here. The most useful doll I ever saw was a large cucumber in the hands of a little Amazonian-Indian girl; she nursed it and washed it and rocked it to sleep in a hammock, and talked to it all day long – there was no part in life which the cucumber did not play. Says Mr. Tylor:

> "An imaginative child will make a dog do duty for a horse, or a soldier for a shepherd, till at last the objective resemblance almost disappears,

[18] *Treatise of Human Nature*, bk. I. pt. III, sec. 8.

> and a bit of wood may be dragged about, resembling a ship on the sea or a coach on the road. Here the likeness of the bit of wood to a ship or coach is very slight indeed; but it is a thing, and can be moved about ... and is an evident assistance to the child in enabling it to arrange and develop its ideas.... Of how much use ... may be seen by taking it away, and leaving the child nothing to play with. ... In later years and among highly educated people the mental process which goes on in a child's playing with wooden soldiers and horses, though it never disappears, must be sought for in more complex phenomena. Perhaps nothing in after-life more closely resembles the effect of a doll upon a child than the effect of the illustrations of a tale upon a grown reader. Here the objective resemblance is very indefinite ... yet what reality is given to the scene by a good picture. ... Mr. Backhouse one day noticed in Van Diemen's Land a woman arranging several stones that were flat, oval, and about, two inches wide, and marked in various directions with black and red lines. These, he learned, represented absent friends, and one larger than the rest stood for a fat native woman on Flinder's Island, known by the name of Mother Brown. Similar practices are found among far higher races than the ill-fated Tasmanians. Among some North American tribes another who has lost a child keeps its memory ever present to her by filling its cradle with black feathers and quills, and carrying it about with her for a year or more. When she stops anywhere, she sets up the cradle and talks to it as she goes about her work, just as she would have done if the dead body had been still alive within it. Here we have an image; but in Africa we find a rude doll representing the child, kept as a memorial. ... Bastian saw Indian women in Peru who had lost an infant carrying about on their backs a wooden doll to represent it."[19]

To many persons among us, photographs of lost ones seem to be fetishes. They, it is true, resemble; but the fact that the mere materiality of the reminder is almost as important as its resemblance is shown by the popularity a hundred years ago of the black taffeta 'silhouettes' which are still found among family relics, and of one of which Fichte could write to his affianced: "*Die Farbe fehlt, das Auge fehlt, es fehlt der himmlische Ausdruck deiner lieblichen Züge*" – and yet go on worshiping it all the same. The opinion so stoutly professed by many, that language is essential to thought, seems to have this much of truth in it, that all our inward images tend invincibly to attach themselves to something sensible, so as to gain in corporeity and life. Words serve this purpose, gestures serve it, stones, straws, chalk-marks, anything will do. As soon as anyone of these things stands for the idea, the latter seems to be more real. Some persons, the present writer among the number, can

[19] *Researches into the Early History of Mankind*, p. 108.

hardly lecture without a black-board: the abstract conceptions must be symbolized by letters, squares or circles, and the relations between them by lines. All this symbolism, linguistic, graphic, and dramatic, has other uses too, for it abridges thought and fixes terms. But one of its uses is surely to rouse the believing reaction and give to the ideas a more living reality. As, when we are told a story, and shown the very knife that did the murder, the very ring whose hiding-place the clairvoyant revealed, the whole thing passes from fairy-land to mother-earth, so here we believe all the more, if only we see that 'the bricks are alive to tell the tale'.

So much for the prerogative position of sensations in regard to our belief. But among the sensations themselves all are not deemed equally real. The more practically important ones, the more permanent ones, and the more aesthetically apprehensible ones are selected from the mass, to be believed in most of all; the others are degraded to the position of mere signs and suggestions of these. This fact has already been adverted to in former chapters.[20] The real color of a thing is that one color-sensation which it gives us when most favorably lighted for vision. Soon its real size, its real shape, etc. – these are but optical sensations selected out of thousands of others, because they have aesthetic characteristics which appeal to our convenience or delight. But I will not repeat what I have already written about this matter, but pass on to our treatment of tactile and muscular sensations, as 'primary qualities', more real than those 'secondary' qualities which eye and ear and nose reveal. Why do we thus so markedly select the *tangible* to be the real? Our motives are not far to seek. The tangible qualities are the least fluctuating. When we get them at all we get them the same. The other qualities fluctuate enormously as our relative position to the object changes. Then, more decisive still, the tactile properties are those most intimately connected with our weal or woe. A dagger hurts us only when in contact with our skin, a poison only when we take it into our mouths, and we can only use an object for our advantage when we have it in our muscular control. It is as tangibles, then, that things concern us most; and the other senses, so far as their practical use goes, do but warn us of what tangible things to expect. They are but organs of anticipatory touch, as Aristotle and Berkeley has with perfect clearness explained.[21]

Among all sensations, the *most* belief-compelling are those productive of pleasure or of pain. Locke expressly makes the *pleasure-* or *pain*-giving quality to be the ultimate human criterion of anything's reality. Discussing (with supposed Berkeleyan before Berkeley) the notion that all our perceptions may be but a dream, he says:

[20] See Vol. I, pp. 285–8; Vol. II, pp. 237 ff.

[21] See *An Essay towards a New Theory of Vision*, §59.

> "He may please to dream that I make him this answer ... that I believe he will allow a very manifest difference between dreaming of being in the fire and being actually in it. But yet if he be resolved to appear so skeptical as to maintain, that what I call 'being actually in the fire' is nothing but a dream; and that we cannot thereby certainly know that any such thing as fire actually exists without us: I answer, that we certainly finding that pleasure or pain [or emotion of any sort] follows upon the application of certain objects to us, whose existence we perceive, or dream that we perceive by our senses, *this certainly is as great as our happiness or misery*, beyond which we have no concernment to know or to be."[22]

THE INFLUENCE OF EMOTION AND ACTIVE IMPULSE ON BELIEF

The quality of arousing emotion, of shaking, moving us or inciting us to action, has as much to do with our belief in an object's reality as the quality of giving pleasure or pain. In Chapter XXV I shall seek to show that our emotions probably owe their pungent quality to the bodily sensations which they involve. Our tendency to believe in emotionally exciting objects (objects of fear, desire, etc.) is thus explained without resorting to any fundamentally new principle of choice. Speaking generally, the more a conceived object *excites* us, the more reality it has. The same object excites us differently at different times. Moral and religious truths come 'home' to us far more on some occasions than on others. As Emerson says, "There is a difference between one and another hour of life in their authority and subsequent effect. Our faith comes in moments.... Yet there is a depth in those brief moments which constrains us to ascribe more reality to them than to all other experiences." The 'depth' is partly, no doubt, the insight into wider systems of unified relation, but far more often than that it is the emotional thrill. Thus, to descend to more trivial examples, a man who has no belief in ghosts by

[22] *Essay*, bk. IV, chap. 2, §14. In another place: "He that sees a candle burning and hath experimented the force of its flame by putting his finger into it, will little doubt that this is something existing without him, which does him harm and puts him to great pain. ... And if our dreamer pleases to try whether the glowing heat of a glass furnace be barely a wandering imagination in a drowsy man's fancy by putting his hand into it, he may, perhaps, be awakened into a certainty, greater than he could wish, that it is something more than bare imagination. So that the evidence is as great as we can desire, being as certain to us as our pleasure or pain, i.e. happiness or misery; beyond which we have no concernment, either of knowing or being. Such an assurance of the existence of things without us is sufficient to direct us in the attaining the good and avoiding the evil which is caused by them, which is the important concernment we have of being made acquainted with them." (*Ibid.*, bk. IV, chap. 11, §8.)

daylight will temporarily believe in them when, alone at midnight, he feels his blood curdle at a mysterious sound or vision, his heart thumping, and his legs impelled to flee. The thought of falling when we walk along a curbstone awakens no emotion of dread; so no sense of reality attaches to it, and we are sure we shall not fall. On a precipice's edge, however, the sickening emotion which the notion of a possible fall engenders makes us believe in the latter's imminent reality, and quite unfits us to proceed.

The greatest proof that a man is *sui compos* is his ability to suspend belief in presence of an emotionally exciting idea. To give this power is the highest result of education. In untutored minds the power does not exist. *Every exciting thought in the natural man carries credence with it. To conceive with passion is eo ipso to affirm.* As Bagehot says:

> "The Caliph Omar ... burnt the Alexandrian Library, saying: 'All books which contain what is not in the Koran are dangerous; all those which contain what is in it are useless!' Probably no one ever had an intenser belief in anything than Omar had in this. Yet it is impossible to imagine it preceded by an argument. His belief in Mahomet, in the Koran, and in the sufficiency of the Koran, probably came to him in spontaneous rushes of emotion; there may have been little vestiges of argument floating here and there, but they did not justify the strength of the emotion, still less did they create it, and they hardly even excused it. ... Probably, when the subject is thoroughly examined, 'conviction' will be proved to be one of the intensest of human emotions, and one most closely connected with the bodily state ... accompanied or preceded by the sensation that Scott makes his seer describe as the prelude of a prophecy: –
>
> 'At length the fatal answer came,
> In characters of living flame –
> Not spoke in words, nor blazed in scroll,
> But borne and branded on my soul'.
>
> A hot flash seems to burn across the brain. Men in these intense states of mind have altered all history, changed for better or worse the creed of myriads, and desolated or redeemed provinces or ages. Nor is this intensity a sign of truth, for it is precisely strongest in those points in which men differ most from each other. John Knox felt it in his anti-Catholicism; Ignatius Loyola in his anti-Protestantism; and both, I suppose, felt it as much as it is possible to feel it."[23]

The reason of the belief is undoubtedly the bodily commotion which the exciting idea sets up. 'Nothing which I can feel like *that* can be false'. All our

[23] W. Bagehot: "The Emotion of Conviction," *Literary Studies*, II, 412–14.

religious and supernatural beliefs are of this order. The surest warrant for immortality is the yearning of our bowels for our dear ones; for God, the sinking sense it gives us to imagine no such Providence or help. So of our political or pecuniary hopes and fears, and things and persons dreaded and desired. "A grocer has a full creed as to foreign policy, a young lady a complete theory of the sacraments, as to which neither has any doubt. ... A girl in a country parsonage will be sure 'that Paris never can be taken', or that 'Bismarck is a wretch'," – all because they have either conceived these things at some moment with passion, or associated them with other things which they have conceived with passion.

M. Renouvier calls this belief of a thing for no other reason than that we conceive it with passion, by the name of *mental vertigo*.[24] Other objects whisper doubt or disbelief; but the object of passion makes us deaf to all but itself, and we affirm it unhesitatingly. Such objects are the delusions of insanity, which the insane person can at odd moments steady himself against, but which again return to sweep him off his feet. Such are the revelations of mysticism. Such, particularly, are the sudden beliefs which animate mobs of men when frenzied impulse to action is involved. Whatever be the action in point – whether the stoning of a prophet, the hailing of a conqueror, the burning of a witch, the baiting of a heretic or Jew, the starting of a forlorn hope, or the flying from a foe – the fact that to believe a certain object will *cause that action to explode* is a sufficient reason for that belief to come. The motor impulse sweeps it unresisting in its train.

The whole history of witchcraft and early medicine is a commentary on the facility with which anything which chances to be conceived is believed the moment the belief chimes in with an emotional mood. 'The cause of sickness?' When a savage asks the cause of anything he means to ask exclusively 'What is to blame?' The theoretic curiosity starts from the practical life's demands. Let some one then accuse a necromancer, suggest a charm or spell which has been cast, and no more 'evidence' is asked for. What evidence is required beyond this intimate sense of the culprit's responsibility, to which our very viscera and limbs reply?[25]

[24] *Psychologie rationnelle*, ch. 12.

[25] Two examples out of a thousand:
Reid: *Inquiry*, ch. II, §9: "I remember, many years ago, a white ox was brought into the country, of so enormous a size that people came many miles to see him. There happened, some months after, an uncommon fatality among women in child-bearing. Two such uncommon events, following one another, gave a suspicion of their connection, and occasioned a common opinion among the country people that the white ox was the cause of this fatality."

H. M. Stanley: *Through the Dark Continent*, II, 384: "On the third day of our stay at Mowa, feeling quite comfortable amongst the people, on account of their friendly

Human credulity in the way of therapeutics has similar psychological roots. If there is anything intolerable (especially to the heart of a woman), it is to do nothing when a loved one is sick or in pain. To do anything is a relief. Accordingly, whatever remedy may be suggested is a spark on inflammable

bearing, I began to write in my note-book the terms for articles, in order to improve my already copious vocabulary of native words. I had proceeded only a few minutes when I observed a strange commotion amongst the people who had been flocking about me, and presently they ran away. In a short time we heard war-cries ringing loudly and shrilly over the table-land. Two hours afterwards, a long line of warriors were seen descending the table-land and advancing towards our camp. There may have been between five and six hundred of them. We, on the other hand, had made but few preparations except such as would justify us replying to them in the event of the actual commencement of hostilities. But I had made many firm friends amongst them, and I firmly believed that I should be able to avert an open rupture. When they had assembled at about a hundred yards in front of our camp, Safeni and I walked up towards them, and sat down midway. Some half-dozen of the Mowa people came near, and the shauri began.

"'What is the matter, my friends?' I asked. 'Why do you come with guns in your hands in such numbers, as though you were coming to fight? Fight? Fight us, your friends! Tut! this is some great mistake, surely.'

"'Mundelé' replied one of them, ... 'our people saw you yesterday make marks on some tara-tara (paper). This is very bad. Our country will waste, our goats will die, our bananas will rot, and our women will dry up. What have we done to you that you should wish to kill us? We have sold you food, and we have brought you wine, each day. Your people are allowed to wander where they please, without trouble. Why is the Mundelé so wicked! We have gathered together to fight you if you do not burn that tara-tara now before our eyes. If you burn it we go away, and shall be your friends as heretofore'.

"I told them to rest there, and left Safeni in their hands as a pledge that I should return. My tent was not fifty yards from the spot, but while going towards it my brain was busy in devising some plan to foil this superstitious madness. My note-book contained a vast number of valuable notes.... I could not sacrifice it to the childish caprice of savages. As I was rummaging my book-box, I came across a volume of Shakespeare (Chandos edition), much worn and well thumbed, and which was of the same size as my field-book; its cover was similar also, and it might be passed for the field-book, provided that no one remembered its appearance too well. I took it to them. 'Is this the tara-tara, friends, that you wish burnt?'

"'Yes, yes, that is it.'

"'Well, take it, and burn it. or keep it.'

"'M–m. No, no, no. We will not touch it. It is fetish. You must burn it.'

"'I! Well, let it be so. I will do anything to please my good friends of Mowa.'

"We walked to the nearest fire. I breathed a regretful farewell to my genial companion, which during many weary hours of night, had assisted to relieve my mind when oppressed by almost intolerable woes, and then gravely consigned the innocent Shakespeare to the flames, heaping the brush-fuel over it with ceremonious care.

"'Ah-h-h,' breathed the poor deluded natives sighing their relief.... 'There is no trouble now.' ... And something approaching to a cheer was shouted among them, which terminated the episode of the Burning of Shakespeare."

soil. The mind makes its spring towards action on that cue, sends for that remedy, and for a day at least believes the danger past. Blame, dread, and hope are thus the great belief-inspiring passions, and cover among them the future, the present, and the past.

These remarks illustrate the earlier heads of the list on page 292 [insert correct page #]. Whichever represented objects give us sensations, especially interesting ones, or incite our motor impulses, or arouse our hate, desire, or fear, are real enough for us. Our requirements in the way of reality terminate in our own acts and emotions, our own pleasures and pains. These are the ultimate fixities from which, as we formerly observed, the whole chain of our beliefs depends, object hanging to object, as the bees, in swarming, hang to each other until, *de proche en proche*, the supporting branch, the Self, is reached and held.

BELIEF IN OBJECTS OF THEORY

Now the merely conceived or imagined objects which our mind represents as hanging to the sensations (causing them, etc.), filling the gaps between them, and weaving their interrupted chaos into order are innumerable. Whole systems of them conflict with other systems, and our choice of which system shall carry our belief is governed by principles which are simple enough, however subtle and difficult may be their application to details. *The conceived system, to pass for true, must at least include the reality of the sensible objects in it, by explaining them as effects on us, if nothing more. The system which includes the most of them, and definitely explains or pretends to explain the rest of them, will, ceteris paribus, prevail.* It is needless to say how far mankind still is from having excogitated such a system. But the various materialisms, idealisms, and hylozoisms show with what industry the attempt is forever made. It is conceivable that several rival theories should equally well include the actual order of our sensations in their scheme, much as the one-fluid and two-fluid theories of electricity formulated all the common electrical phenomena equally well. The sciences are full of these alternatives. Which theory is then to be believed? *That theory will be most generally believed which, besides offering us objects able to account satisfactorily for our sensible experience, also offers those which are most interesting, those which appeal most urgently to our aesthetic, emotional, and active needs.* So here, in the higher intellectual life, the same selection among general conceptions goes on which went on among the sensations themselves. First, a word of their relation to our emotional and active needs – and here I can do no better than quote from an article published some years ago:[26]

[26] "Rationality, Activity, and Faith" (*Princeton Review*, July 1882, pp. 64–9).

"A philosophy may be unimpeachable in other respects, but either of two defects will be fatal to its universal acceptance. First, its ultimate principle must not be one that essentially baffles and disappoints our dearest desires and most cherished powers. A pessimistic principle like Schopenhauer's incurably vicious Will-substance, or Hartmann's wicked jack-at-all-trades, the Unconscious, will perpetually call forth essays at other philosophies. Incompatibility of the future with their desires and active tendencies is, in fact, to most men a source of more fixed disquietude than uncertainty itself. Witness the attempts to overcome the 'problem of evil', the 'mystery of pain'. There is no 'problem of good'.

"But a second and worse defect in a philosophy than that of contradicting our active propensities is to give them no Object whatever to press against. A philosophy whose principle is so incommensurate with our most intimate powers as to deny them all relevancy in universal affairs, as to annihilate their motives at one blow, will be even more unpopular than pessimism. Better face the enemy than the eternal Void! This is why materialism will always fail of universal adoption, however well it may fuse things into an atomistic unity, however clearly it may prophesy the future eternity. For materialism denies reality to the objects of almost all the impulses which we most cherish. The real *meaning* of the impulses, it says, is something which has no emotional interest for us whatever. But what is called extradition is quite as characteristic of our emotions as of our sense. Both point to an Object as the cause of the present feeling. What an intensely objective reference lies in fear! In like manner an enraptured man, a dreary-feeling man, are not simply aware of their subjective states; if they were, the force of their feelings would evaporate. Both believe there is outward cause *why* they should feel as they do: either 'It is a glad world! how good is life!' or 'What a loathsome tedium is existence!' Any philosophy which annihilates the validity of the reference by explaining away its objects or translating them into terms of no emotional pertinency leaves the mind with little to care or act for. This is the opposite condition from that of nightmare, but when acutely brought home to consciousness it produces a kindred horror. In nightmare we have motives to act, hut no power: here we have powers, but no motives. A nameless *Unheimlichkeit* comes over us at the thought of there being nothing eternal in our final purposes, in the objects of those loves and aspirations which are our deepest energies. The monstrously lopsided equation of the universe and its knower, which we postulate as the ideal of cognition, is perfectly paralleled by the no less lopsided equation of the universe and the *doer*. We demand in it a *character* for which our emotions and active propensities shall be a match. Small as we are, minute as is the point by which the Cosmos impinges upon each one of us, each one desires to feel that his reaction at that point is congruous with the demands of the vast whole, that balances the latter, so to speak, and is able to do what it expects of him. But as his abilities

to 'do' lie wholly in the line of his natural propensities; as he enjoys reaction with such emotions as fortitude, hope, rapture, admiration, earnestness, and the like; and as he very unwillingly reacts with fear, disgust, despair, or doubt, – a philosophy which should legitimate only emotions of the latter sort would be sure to leave the mind a prey to discontent and craving.

"It is far too little recognized how entirely the intellect is built up of practical interests. The theory of Evolution is beginning to do very good service by its reduction of all mentality to the type of reflex action. Cognition, in this view, is but a fleeting moment, a cross-section at a certain point of what in its totality is a motor phenomenon. In the lower forms of life no one will pretend that cognition is anything more than a guide to appropriate action. The germinal question concerning things brought for the first time before consciousness is not the theoretic 'What is that?' but the practical 'Who goes there?' or rather, as Horwicz has admirably put it, 'What is to be done?' – '*Was fang' ich an?*' In all our discussions about the intelligence of lower animals the only test we use is that of their *acting* as if for a purpose. Cognition, in short, is incomplete until discharged in act. And although it is true that the later mental development, which attains its maximum through the hypertrophied cerebrum of man, gives birth to a vast amount of theoretic activity over and above that which is immediately ministerial to practice, yet the earlier claim is only postponed, not effaced, and the active nature asserts its rights to the end....

"If there be any truth at all in this view, it follows that however vaguely a philosopher may define the ultimate universal datum, he cannot be said to leave it unknown to us so long as he in the slightest degree pretends that our emotional or active attitude towards it should be of one sort rather than another. He who says, 'Life is real, life is earnest', however much he may speak of the fundamental mysteriousness of things, gives a distinct definition to that mysteriousness by ascribing to it the right to claim from us the particular mood called seriousness, which means the unwillingness to live with energy, though energy bring pain. The same is true of him who says that all is vanity. Indefinable as the predicate vanity may be *in se*, it is clearly enough something which permits anesthesia, mere escape from suffering, to be our rule of life. There is no more ludicrous incongruity than for agnostics to proclaim with one breath that the substance of things is unknowable, and with the next that the thought of it should inspire us with admiration of its glory, reverence, and a willingness to add our cooperative push in the direction towards which its manifestations seem to be drifting. The unknowable may be unfathomed, but if it make such distinct demands upon our activity, we surely are not ignorant of its essential quality.

"If we survey the field of history and ask what feature all great periods of revival, of expansion of the human mind, display in common, we shall find, I think, simply this: that each and all of them have said to the human

being, 'The inmost nature of the reality is congenial to *powers* which you possess.' In what did the emancipating message of primitive Christianity consist, but in the announcement that God recognizes those weak and tender impulses which pagrtnism had so rudely overlooked? Take repentance: the man who can do nothing rightly can at least repent of his failures. But for paganism this faculty of repentance was a pure supernumerary, a straggler too late for the fair. Christianity took it and made it the one power within us which appealed straight to the heart of God. And after the night of the Middle Ages had so long branded with obloquy even the generous impulses of the flesh, and defined the Reality to be such that only slavish natures could commune with it? in what did the *Sursum corda!* of the Renaissance lie but in the proclamation that the archetype of verity in things laid claim on the widest activity of our whole aesthetic being? What were Luther's mission and Wesley's but appeals to powers which even the meanest of men might carry with them, faith and self-despair, but which were personal, requiring no priestly intermediation, and which brought their owner face to face with God? What caused the wildfire influence of Rousseau but the assurance he gave that man's nature was in harmony with the nature of things, if only the paralyzing corruptions of custom would stand from between? How did Kant and Fichte, Goethe and Schiller, inspire their time with cheer, except by saying, 'Use all your powers; that is the only obedience which the universe exacts'? And Carlyle with his gospel of Work, of Fact, of Veracity, how does he move us except by saying that the universe imposes no tasks upon us but such as the most humble can perform? Emerson's creed that everything that ever was or will be is here in the enveloping Now; that man has but to obey himself – 'He who will rest in what he *is*, is a part of Destiny' – is in like manner nothing but an exorcism of all scepticism as to the pertinency of one's natural faculties.

"In a word, 'Son of Man, *stand upon thy feet* and I will speak unto thee!' is the only revelation of truth to which the solving epochs have helped the disciple. But that has been enough to satisfy the greater part of his rational need. *In se* and *per se* the universal essence has hardly been more defined by any of these formulae than by the agnostic *x*; but the mere assurance that my powers, such as they are, are not irrelevant to it, but pertinent, that it speaks to them and will in some way recognize their reply, that I can be a match for it if I will, and not a footless waif, suffices to make it rational to my feeling in the sense given above. Nothing could be more absurd than to hope for the definitive triumph of any philosophy which should refuse to legitimate, and to legitimate in an emphatic manner, the more powerful of our emotional and practical tendencies. Fatalism, whose solving word in all crises of behavior is 'All striving is vain', will never reign supreme, for the impulse to take life strivingly is indestructible in the race. Moral creeds which speak to that impulse will be widely successful in spite of inconsistency, vagueness, and shadowy

determination of expectancy. Man needs a rule for his will, and will invent one if one be not given him."

After the emotional and active needs come the intellectual and aesthetic ones. The two great aesthetic principles, of richness and of ease, dominate our intellectual as well as our sensuous life. And, *ceteris paribus*, no system which should not be rich, simple, and harmonious would have a chance of being chosen for belief, if rich, simple, and harmonious systems were also there. Into the latter we should unhesitatingly settle, with that welcoming attitude of the will in which belief consists. To quote from a remarkable book:

> "This law, that our consciousness constantly tends to the minimum of complexity and to the maximum of definiteness, is of great importance for all our knowledge.... Our own activity of attention will thus determine what we are to know and what we are to believe. If things have more than a certain complexity, not only will our limited powers of attention forbid us to unravel this complexity, but we shall strongly desire to believe the things much simpler than they are. For our thoughts about them will have a constant tendency to become as simple and definite as possible. Put a man into a perfect chaos of phenomena, sights, sounds, feelings; and if the man continued to exist, and to be rational at all, his attention would doubtless soon find for him a way to make up some kind of rhythmic regularity, which he would impute to the things about him, so as to imagine that he had discovered some laws of sequence in this mad new world. And thus, in every case where we fancy ourselves sure of a simple law of Nature, we must remember that a great deal of the fancied simplicity may be due in the given case not to Nature, but to the ineradicable prejudice of our own minds in favor of regularity and simplicity. All our thoughts are determined, in great measure, by this law of least effort, as it is found exemplified in our activity of attention.... The aim of the whole process seems to be to reach as complete and united a conception of reality as is possible, a conception wherein the greatest fulness of data shall be combined with the greatest simplicity of conception. The effort of consciousness seems to be to combine the greatest richness of content with the greatest definiteness of organization."[27]

The richness is got by including all the facts of sense in the scheme; the simplicity, by deducing them out of the smallest possible number of permanent and independent primordial entities: the definite organization, by assimilating these latter to ideal objects between which relations of an inwardly

[27] J. Royce, *The Religious Aspect of Philosophy* (Boston, 1885). pp. 316–17, 357.

rational sort obtain. What these ideal objects and rational relations are will require a separate chapter to show.[28] Meanwhile, enough has surely been said to justify the assertion made above that no general offhand answer can be given as to which objects mankind shall choose as its realities. The fight is still under way. Our minds are yet chaotic; and at best we make a mixture and a compromise, as we yield to the claim of this interest or that, and follow first one and then another principle in turn. It is undeniably true that materialistic, or so-called 'scientific', conceptions of the universe have so far gratified the purely intellectual interests more than the mere sentimental conceptions have. But, on the other hand, as already remarked, they leave the emotional and active interests cold. *The perfect object of belief would be a God or 'Soul of the World', represented both optimistically and moralistically (if such a combination could be), and withal so definitely conceived as to show us why our phenomenal experiences should be sent to us by Him in just the very way in which they come.* All Science and all History would thus be accounted for in the deepest and simplest fashion. The very room in which I sit, its sensible walls and floor, and the feeling the air and fire within it give me, no less than the 'scientific' conceptions which I am urged to frame concerning the mode of existence of all these phenomena when my back is turned, would then all be corroborated, not de-realized, by the ultimate principle of my belief. The World-soul sends me just those phenomena in order that I may react upon them; and among the reactions is the intellectual one of spinning these conceptions. What is *beyond* the crude experiences is not an *alternative* to them, but something that *means* them for me here and now. It is safe to say that, if ever such a system is satisfactorily excogitated, mankind will drop all other systems and cling to that one alone as real. Meanwhile the other systems coexist with the attempts at that one, and, all being alike fragmentary, each has its little audience and day.

I have now, I trust, shown sufficiently what the psychologic sources of the sense of reality are. Certain postulates are given in our nature; and whatever satisfies those postulates is treated as if real.[29] I might therefore finish the chapter here, were it not that a few additional words will set the truth in a still clearer light.

[28] Chapter XXVIII.

[29] Prof. Royce puts this well in discussing idealism and the reality of an 'external' world. "If the history of popular speculation on these topics could be written, how much of cowardice and shuffling would be found in the behavior of the natural mind before the question, 'How dost thou know of an external reality?' Instead of simply and plainly answering: 'I mean by the external world in the first place something that I accept or demand, that I posit, postulate, actively construct on the basis of sense-data', the natural man gives us all kinds of vague compromise answers.... Where shall these endless turnings and twistings have an end? ... All these lesser motives are appealed to, and the one ultimate

DOUBT

There is hardly a common man who (if consulted) would not say that things come to us in the first instance *as ideas*; and that if we take them for realities, it is because we *add something to them*, namely, the predicate of having also '*real existence outside of our thought*'. This notion that a higher faculty than the mere *having* of a conscious content is needed to make us know anything real by its means has pervaded psychology from the earliest times, and is the tradition of Scholasticism, Kantism, and Common-sense. Just as sensations must come as inward affections and then be 'extradited'; as objects of memory must appear at first as presently unrealities, and subsequently be 'projected' backwards as past realities; so conceptions must be *entia rationis* till a higher faculty uses them as windows to look beyond the ego, into the real *extra*-mental world; – so runs the orthodox and popular account.

And there is no question that this is a true account of the way in which many of our later beliefs come to pass. The logical distinction between the bare thought of an object and belief in the object's reality is often a chronological distinction as well. The having and the crediting of and idea do not always coalesce; for often we first suppose and then believe; first play with the notion, frame the hypothesis, and then affirm the existence, of an object of thought. And we are quite conscious of the succession of the two mental acts. But these cases are none of them *primitive* cases. They only occur in minds long schooled to doubt by the contradictions of experience. *The primitive impulse is to affirm immediately the reality of all that is conceived*.[30] When we do doubt, however, in what does the subsequent

motive is neglected. The ultimate motive with the man of every-day life is the *will to have an external world*. Whatever consciousness contains, reason will persist in spontaneously adding the thought: 'But there *shall be* something beyond this' ... The popular assurance of an external world is the *fixed determination to make one*, now and henceforth." (*Religious Aspect of Philosophy*, p. 303–4 – the italics are my own.) This immixture of the will appears most flagrantly in the fact that although external matter is doubted commonly enough, minds external to our own are never doubted. We need them too much, are too essentially social to dispense with them. Semblances of matter may suffice to react upon, but not semblances of communing souls. A psychic solipsism is too hideous a mockery of our wants, and, so far as I know, has never been seriously entertained. – Chapters IX and X of Prof. Royce's work are on the whole the clearest account of the psychology of belief with which I am acquainted.

30 "The leading fact in Belief, according to my view of it, is our Primitive Credulity. We begin by believing everything; whatever is, is true.... The animal born in the morning of a summer day proceeds upon the fact of daylight; assumes the perpetuity of that fact. Whatever it is disposed to do, it does without misgivings. If in the morning it began around of operations continuing for hours, under the full benefit of daylight, it would unhesitatingly begin the same round in the evening. Its state of mind is practically one of unbounded confidence; but, as yet, it does not understand what confidence means.

resolution of the doubt consist? It either consists in a purely verbal performance, the coupling of the adjectives 'real' or 'outwardly existing' (as predicates) to the thing originally conceived (as subject); or it consists in the perception in the given case of *that for which these adjectives*, abstracted from other similar concrete cases, *stand*. But what these adjectives stand for, we now know well. They stand for certain relations (immediate, or through intermediaries) to ourselves. Whatever concrete objects have hitherto stood in those relations have been for us 'real', 'outwardly existing'. So that when we now abstractly admit a thing to be 'real' (without perhaps going through any definite perception of its relations), it is as if we said "it belongs in the same world with those other objects." Naturally enough, we have hourly opportunities for this summary process of belief. All remote objects in space or time are believed in this way. When I believe that some prehistoric savage chipped this flint, for example, the reality of the savage and of his act makes no direct appeal either to my sensation, emotion, or volition. What I mean by my belief in it is simply my dim sense of a *continuity* between the long dead savage and his doings and the present world of which the hint forms part. It is pre-eminently a case for applying our doctrine of the 'fringe' (see Vol. I, p. 258). When I think the savage with one fringe of relationship, I believe in him; when I think him without that fringe, or with another one (as, e.g., if I should class him with 'scientific vagaries' in general), I disbelieve him. The word 'real' itself is, in short, a fringe.

RELATIONS OF BELIEF AND WILL

We shall see in Chapter XXVI that will consists in nothing but a manner of attending to certain objects, or consenting to their stable presence before the mind. The objects, in the case of will, are those whose existence depends on our thought, movements of our own body for example, or facts which such movements executed in future may make real. Objects of belief, on the contrary, are those which do not change according as we

"The pristine assurance is soon met by checks; a disagreeable experience leading to new insight. To be thwarted and opposed is one of our earliest and most frequent pains. It develops the sense of a distinction between free and obstructed impulses; the unconsciousness of an open way is exchanged for consciousness; we are now said properly to believe in what has never been contradicted, as we disbelieve in what has been contradicted. We believe that, after the dawn of day, there is before us a continuance of light; we do not believe that this light is to continue forever.

"Thus, the vital circumstance in belief is never to be contradicted – never to lose *prestige*. The number of repetitions counts for little in the process: we are as much convinced after ten as after fifty; we are more convinced by ten unbroken than by fifty for and one against." (Bain: *The Emotions and the Will*, pp. 511, 512.)

think regarding them. I *will* to get up early tomorrow morning; I *believe* that I got up late yesterday morning; I *will* that my foreign bookseller in Boston shall procure me a German book and write to him to that effect. I *believe* that he will make me pay three dollars for it when it comes, etc. Now the important thing to notice is that this difference between the objects of will and belief is entirely immaterial, as far as the relation of the mind to them goes. All that the mind does is in both cases the same; it looks at the object and consents to its existence, espouses it, says 'it shall be my reality'. It turns to it, in short, in the interested active emotional way. The rest is done by nature, which in some cases *makes* the objects real which we think of in this manner, and in other cases does not. Nature cannot change the past to suit our thinking. She cannot change the stars or the winds; but she *does* change our bodies to suit our thinking, and through their instrumentality changes much besides; so the great practical distinction between objects which we may will or unwill, and objects which we can merely believe or disbelieve, grows up, and is of course one of the most important distinctions in the world. Its roots, however, do not lie in psychology, but in physiology; as the chapter on Volition will abundantly make plain. *Will and belief, in short, meaning a certain relation between objects and the Self, are two names for one and the same* PSYCHOLOGICAL *phenomenon*. All the questions which arise concerning one are questions which arise concerning the other. The causes and conditions of the peculiar relation must be the same in both. The free-will question arises as regards belief. If our wills are indeterminate, so must our beliefs be, etc. The first act of free-will, in short, would naturally be to believe in free-will, etc. In Chapter XXVI, I shall mention this again.

A practical observation may end this chapter. If belief consists in an emotional reaction of the entire man on an object, how *can* we believe at will? We cannot control our emotions. Truly enough, a man cannot believe at will abruptly. Nature sometimes, and indeed not very infrequently, produces instantaneous conversions for us. She suddenly puts us in an active connection with objects of which she had till then left us cold. "I realize for the first time," we then say, "what that means!" This happens often with moral propositions. We have often heard them; but now they shoot into our lives; they move us; we feel their living force. Such instantaneous beliefs are truly enough not to be achieved by will. But *gradually* our will can lead us to same results by a very simple method: *we need only in cold blood* ACT *as if the thing in question were real, and keep acting as if it were real, and it infallibly end by growing into such a connection with our life that it will become real*. It will become so knit with habit and emotion that our interests in it will be those which characterize belief. Those to whom 'God' and 'Duty' are now mere names can make them much more than that, if they make a little sacrifice to them every day. But

all this is so well known in moral and religious education that I need say no more.[31]

[31] *Literature*. D. Hume: *Treatise on Human Nature*, part III. §§vii-x. A. Bain: *Emotions and the Will*, chapter on Belief (also pp. 20 ff). J. Sully: *Sensation and Intuition*, essay iv. J. Mill: *Analysis of the Human Mind*, chapter xi. Charles Renouvier: *Psychologie rationnelle*, vol. II, pt. ii; and *Esquisse d'une classification systématique des doctrines philosophiques*, part vi. J. H. Newman: *A Grammar of Assent*. J. Venn: *On Some of the Characteristics of Belief*. V. Brochard: *De l'erreur*, part II, chap. vi, ix; and *Revue Philosophique*, XVIII, 1. E. Rabier: *Psychologie*, chap xxi, Appendix. Ollé-Laprune: *De la certitude morale* (1880). G. F. Stout: "The Genesis of the Cognition of Physical Reality," in Mind, Jan. 1890. J. Pikler: *The Psychology of the Belief in Objective Existence* (London, 1890). – Mill says that we believe present sensations; and makes our belief in all other things a matter of *association* with these. So far so good; but as he makes no mention of emotional or volitional reaction, Bain rightly charges him with treating belief as a purely intellectual state. For Bain belief is rather an incident of our active life. When a thing is such as to make us *act* on it, then we believe it, according to Bain. "But how about past things, or remote things, upon which no reaction of ours is possible? And how about belief in things which *check* action" says Sully, who considers that we believe a thing only when "the idea of it has an inherent tendency to approximate in character and intensity to a sensation." It is obvious that each of these authors emphasizes a true aspect of the question. My own account has sought to be more complete, sensation, association, and active reaction all being acknowledged to be concerned. The most compendious possible formula perhaps would be that *our belief and attention* are the same fact. For the moment, what we attend to is reality; Attention is a motor reaction; and we are so made that sensations force attention from us. On Belief and Conduct see an article by Leslie Stephen, *Fortnightly Review*, Sept. 1888.

A set of facts have been recently brought to my attention which I hardly know how to treat, so I say a word about them in this footnote. Refer to a type of experience which has frequently found a place among the 'Yes' answers to the 'Census of Hallucinations', and which is generally described by those who report it as an 'impression of the presence' of someone near them, although no sensation either of sight, hearing, or touch is involved. From the way in which this experience is spoken of by those who have had it, it would appear to be an extremely definite and positive state of mind, coupled with a belief in the reality of its object quite as strong as any direct sensation ever gives. And yet *no* sensation seems to be connected with it at all. Sometimes the person whose nearness is thus impressed is a known person, dead or living, sometimes an unknown one. His attitude and situation are often very definitely impressed, and so, sometimes (though not by way of hearing), are words which he wishes to say.

The phenomenon would seem to be due to a pure *conception* becoming saturated with the sort of stinging urgency which ordinarily only sensations bring. But I cannot yet persuade myself that the urgency in question consists in concomitant emotional and motor impulses. The 'impression' may come quite suddenly and depart quickly; it may carry no emotional suggestions, and wake no motor consequences beyond those involved in attending to it. Altogether, the matter is somewhat paradoxical, and no conclusion can be come to until more definite data are obtained.

Perhaps the most curious case of the sort which I have received is the following. The subject of the observation, Mr. P., is an exceptionally intelligent witness, though the words of the narrative are his wife's.

"Mr. P. has all his life been the occasional subject of rather singular delusions or impressions of various kinds. If I had belief in the existence of latent or embryo faculties, other than the five senses, I should explain them on that ground. Being totally blind, his other perceptions are abnormally keen and developed, and given the existence of a rudimentary sixth sense, it would be only natural that this also should be more acute in him than in others. One of the most interesting of his experiences in this line was the frequent apparition of a corpse some years ago, which may be worth the attention of your Committee on that subject. At the lime Mr. P. had a music-room in Boston on Beacon Street, where he used to do severe and protracted practice with little interruption. Now, all one season it was a very familiar occurrence with him while in the midst of work to feel a cold draft of air suddenly upon his face, with a prickling sensation at the roots of his hair, when he would turn from the piano, and a figure which he knew to be dead would come sliding under the crack of the door from without, flattening itself to squeeze through and rounding out again to the human form. It was of a middle-aged man, and drew itself along the carpet on hands and knees, but with head thrown back till it reached the sofa, upon which it stretched itself. It remained some moments, but vanished always if Mr. P. spoke or made a decided movement. The most singular point in the occurrence was its frequent repetition. He might expect it on any day between two and four o'clock, and it came always heralded by the same sudden cold shiver, and was invariably the same figure which went through the same movements. He afterwards traced the whole experience to strong tea. He was in the habit of taking cold tea, which always stimulates him, for lunch, and on giving up this practice he never saw this or any other apparition again. However, even allowing, as is doubtless true, that the event was a delusion of nerves first fatigued by overwork and then excited by this stimulant, there is one point which is still wholly inexplicable and highly interesting to me. Mr. P. has no memory whatever of sight, nor conception of it. It is impossible for him to form any idea of what we mean by light or color, consequently he has no cognizance of any object which does not reach his sense of hearing or of touch, though these are so acute as to give a contrary impression sometimes to other people. When he becomes aware of the presence of a person or an object, by means which seem mysterious to outsiders, he can always trace it naturally and legitimately to slight echoes, perceptible only to his keen ears, or to differences in atmospheric pressure, perceptible only to his acute nerves of touch; but with the apparition described, for the only time in his experience, he was aware of presence, size, and appearance, without the use of either of these mediums. The figure never produced the least sound nor came within a number of feet of his person, yet he knew that it was a man, that it moved, and in what direction, even that it wore a full beard, which, like the thick curly heir, was partially gray; also that it war, dressed in the style of suit known as 'pepper and salt'. These points were all perfectly distinct and invariable each time. If asked how he perceived them, he will answer he cannot tell, he simply knew it, and so strongly and so distinctly that it is impossible to shake the opinion as to the exact details of the man's appearance. It would seem that in this delusion of the senses he really *saw*, as he has never done in the actual experiences of life, except in the first two years of childhood."

On cross-examining Mr. P., I could not make out that there was anything like visual imagination involved, although he was quite unable to describe in just what terms the false perception was carried on. It seemed to be more like an intensely definite *conception* than anything else, a conception to which the feeling of *present reality* was attached, but in no such shape as easily to fail under the heads laid down in my text.

THE WILL TO BELIEVE

William James, "The Will to Believe." *The Will to Believe and Other Essays in Popular Philosophy* (New York: Longmans, Green, and Co., 1897), chap. 1, pp. 1–31.

An Address to the Philosophical Clubs of Yale and Brown Universities. First published in the *New World*, June, 1896.

In the recently published *Life* by Leslie Stephen of his brother, Fitzjames, there is an account of a school to which the latter went when he was a boy. The teacher, a certain Mr. Guest, used to converse with his pupils in this wise: "Gurney, what is the difference between justification and sanctification? – Stephen, prove the omnipotence of God!" etc. In the midst of our Harvard freethinking and indifference we are prone to imagine that here at your good old orthodox College conversation continues to be somewhat upon this order; and to show you that we at Harvard have not lost all interest in these vital subjects, I have brought with me to-night something like a sermon on justification by faith to read to you, – I mean an essay in justification of faith, a defence of our right to adopt a believing attitude in religious matters, in spite of the fact that our merely logical intellect may not have been coerced. "The Will to Believe," accordingly, is the title of my paper.

I have long defended to my own students the lawfulness of voluntarily adopted faith; but as soon as they have got well imbued with the logical spirit, they have as a rule refused to admit my contention to be lawful philosophically, even though in point of fact they were personally all the time chock-full of some faith or other themselves. I am all the while, however, so profoundly convinced that my own position is correct, that your invitation has seemed to me a good occasion to make my statements more clear. Perhaps your minds will be more open than those with which I have hitherto had to deal. I will be as little technical as I can, though I must begin by setting up some technical distinctions that will help us in the end.

I

Let us give the name of *hypothesis* to anything that may be proposed to our belief; and just as the electricians speak of live and dead wires, let us speak of any hypothesis as either *live* or *dead*. A live hypothesis is one which

appeals as a real possibility to him to whom it is proposed. If I ask you to believe in the Mahdi, the notion makes no electric connection with your nature – it refuses to scintillate with any credibility at all. As an hypothesis it is completely dead. To an Arab, however (even if he be not one of the Mahdi's followers), the hypothesis is among the mind's possibilities: it is alive. This shows that deadness and liveness in an hypothesis are not intrinsic properties, but relations to the individual thinker. They are measured by his willingness to act. The maximum of liveness in an hypothesis means willingness to act irrevocably. Practically, that means belief; but there is some believing tendency wherever there is willingness to act at all.

Next, let us call the decision between two hypotheses an *option*. Options may be of several kinds. They may be – 1, *living* or *dead*; 2, *forced* or *avoidable*; 3, *momentous* or *trivial*; and for our purposes we may call an option a *genuine* option when it is of the forced, living, and momentous kind.

1. A living option is one in which both hypotheses are live ones. If I say to you: "Be a theosophist or be a Mohammedan," it is probably a dead option, because for you neither hypothesis is likely to be alive. But if I say: "Be an agnostic or be a Christian," it is otherwise: trained as you are, each hypothesis makes some appeal, however small, to your belief.

2. Next, if I say to you: "Choose between going out with your umbrella or without it," I do not offer you a genuine option, for it is not forced. You can easily avoid it by not going out at all. Similarly, if I say, "Either love me or hate me," "Either call my theory true or call it false," your option is avoidable. You may remain indifferent to me, neither loving nor hating, and you may decline to offer any judgment as to my theory. But if I say, "Either accept this truth or go without it," I put on you a forced option, for there is no standing place outside of the alternative. Every dilemma based on a complete logical disjunction, with no possibility of not choosing, is an option of this forced kind.

3. Finally, if I were Dr. Nansen and proposed to you to join my North Pole expedition, your option would be momentous; for this would probably be your only similar opportunity, and your choice now would either exclude you from the North Pole sort of immortality altogether or put at least the chance of it into your hands. He who refuses to embrace a unique opportunity loses the prize as surely as if he tried and failed. *Per contra*, the option is trivial when the opportunity is not unique, when the stake is insignificant, or when the decision is reversible if it later prove unwise. Such trivial options abound in the scientific life. A chemist finds an hypothesis live enough to spend a year in its verification: he believes in it to that extent. But if his experiments prove inconclusive either way, he is quit for his loss of time, no vital harm being done.

It will facilitate our discussion if we keep all these distinctions well in mind.

II

The next matter to consider is the actual psychology of human opinion. When we look at certain facts, it seems as if our passional and volitional nature lay at the root of all our convictions. When we look at others, it seems as if they could do nothing when the intellect had once said its say. Let us take the latter facts up first.

Does it not seem preposterous on the very face of it to talk of our opinions being modifiable at will? Can our will either help or hinder our intellect in its perceptions of truth? Can we, by just willing it, believe that Abraham Lincoln's existence is a myth, and that the portraits of him in *McClure's Magazine* are all of some one else? Can we, by any effort of our will, or by any strength of wish that it were true, believe ourselves well and about when we are roaring with rheumatism in bed, or feel certain that the sum of the two one-dollar bills in our pocket must be a hundred dollars? We can *say* any of these things, but we are absolutely impotent to believe them; and of just such things is the whole fabric of the truths that we do believe in made up – matters of fact, immediate or remote, as Hume said, and relations between ideas, which are either there or not there for us if we see them so, and which if not there cannot be put there by any action of our own.

In Pascal's *Thoughts* there is a celebrated passage known in literature as Pascal's wager. In it he tries to force us into Christianity by reasoning as if our concern with truth resembled our concern with the stakes in a game of chance. Translated freely his words are these: You must either believe or not believe that God is – which will you do? Your human reason cannot say. A game is going on between you and the nature of things which at the day of judgment will bring out either heads or tails. Weigh what your gains and your losses would be if you should stake all you have on heads, or God's existence: if you win in such case, you gain eternal beatitude; if you lose, you lose nothing at all. If there were an infinity of chances, and only one for God in this wager, still you ought to stake your all on God; for though you surely risk a finite loss by this procedure, any finite loss is reasonable, even a certain one is reasonable, if there is but the possibility of infinite gain. Go, then, and take holy water, and have masses said; belief will come and stupefy your scruples – *Cela vous fera croire et vous abêtira.* Why should you not? At bottom, what have you to lose?

You probably feel that when religious faith expresses itself thus, in the language of the gaming-table, it is put to its last trumps. Surely Pascal's own personal belief in masses and holy water had far other springs; and this celebrated page of his is but an argument for others, a last desperate snatch at a weapon against the hardness of the unbelieving heart. We feel that a faith in masses and holy water adopted wilfully after such a mechanical calculation would lack the inner soul of faith's reality; and if we were ourselves in the place of the Deity, we should probably take particular pleasure in cutting off

believers of this pattern from their infinite reward. It is evident that unless there be some pre-existing tendency to believe in masses and holy water, the option offered to the will by Pascal is not a living option. Certainly no Turk ever took to masses and holy water on its account; and even to us Protestants these means of salvation seem such foregone impossibilities that Pascal's logic, invoked for them specifically, leaves us unmoved. As well might the Mahdi write to us, saying, "I am the Expected One whom God has created in his effulgence. You shall be infinitely happy if you confess me; otherwise you shall be cut off from the light of the sun. Weigh, then, your infinite gain if I am genuine against your finite sacrifice if I am not!" His logic would be that of Pascal; but he would vainly use it on us, for the hypothesis he offers us is dead. No tendency to act on it exists in us to any degree.

The talk of believing by our volition seems, then, from one point of view, simply silly. From another point of view it is worse than silly, it is vile. When one turns to the magnificent edifice of the physical sciences, and sees how it was reared; what thousands of disinterested moral lives of men lie buried in its mere foundations; what patience and postponement, what choking down of preference, what submission to the icy laws of outer fact are wrought into its very stones and mortar; how absolutely impersonal it stands in its vast augustness – then how besotted and contemptible seems every little sentimentalist who comes blowing his voluntary smoke-wreaths, and pretending to decide things from out of his private dream! Can we wonder if those bred in the rugged and manly school of science should feel like spewing such subjectivism out of their mouths? The whole system of loyalties which grow up in the schools of science go dead against its toleration; so that it is only natural that those who have caught the scientific fever should pass over to the opposite extreme, and write sometimes as if the incorruptibly truthful intellect ought positively to prefer bitterness and unacceptableness to the heart in its cup.

> "It fortifies my soul to know
> That, though I perish, Truth is so –"

sings Clough, while Huxley exclaims: "My only consolation lies in the reflection that, however bad our posterity may become, so far as they hold by the plain rule of not pretending to believe what they have no reason to believe, because it may be to their advantage so to pretend [the word 'pretend' is surely here redundant], they will not have reached the lowest depth of immorality." And that delicious *enfant terrible* Clifford writes: "Belief is desecrated when given to unproved and unquestioned statements for the solace and private pleasure of the believer.... Whoso would deserve well of his fellows in this matter will guard the purity of his belief with a very fanaticism of jealous care, lest at any time it should rest on an unworthy

object, and catch a stain which can never be wiped away.... If [a] belief has been accepted on insufficient evidence [even though the belief be true, as Clifford on the same page explains] the pleasure is a stolen one.... It is sinful, because it is stolen in defiance of our duty to mankind. That duty is to guard ourselves from such beliefs as from a pestilence which may shortly master our own body and then spread to the rest of the town.... It is wrong always, everywhere, and for every one, to believe anything upon insufficient evidence."

III

All this strikes one as healthy, even when expressed, as by Clifford, with somewhat too much of robustious pathos in the voice. Free-will and simple wishing do seem, in the matter of our credences, to be only fifth wheels to the coach. Yet if any one should thereupon assume that intellectual insight is what remains after wish and will and sentimental preference have taken wing, or that pure reason is what then settles our opinions, he would fly quite as directly in the teeth of the facts.

It is only our already dead hypotheses that our willing nature is unable to bring to life again. But what has made them dead for us is for the most part a previous action of our willing nature of an antagonistic kind. When I say "willing nature," I do not mean only such deliberate volitions as may have set up habits of belief that we cannot now escape from – I mean all such factors of belief as fear and hope, prejudice and passion, imitation and partisanship, the circumpressure of our caste and set. As a matter of fact we find ourselves believing, we hardly know how or why. Mr. Balfour gives the name of "authority" to all those influences, born of the intellectual climate, that make hypotheses possible or impossible for us, alive or dead. Here in this room, we all of us believe in molecules and the conservation of energy, in democracy and necessary progress, in Protestant Christianity and the duty of fighting for "the doctrine of the immortal Monroe," all for no reasons worthy of the name. We see into these matters with no more inner clearness, and probably with much less, than any disbeliever in them might possess. His unconventionality would probably have some grounds to show for its conclusions; but for us, not insight, but the *prestige* of the opinions, is what makes the spark shoot from them and light up our sleeping magazines of faith. Our reason is quite satisfied, in nine hundred and ninety-nine cases out of every thousand of us, if it can find a few arguments that will do to recite in case our credulity is criticized by someone else. Our faith is faith in someone else's faith, and in the greatest matters this is most the case. Our belief in truth itself, for instance, that there is a truth, and that our minds and it are made for each other – what is it but a passionate affirmation of desire, in which our social system backs us up? We want to have a truth; we want to believe that our experiments and studies and discussions must put us in a continually better

and better position towards it; and on this line we agree to fight out our thinking lives. But if a pyrrhonistic sceptic asks us *how we know* all this, can our logic find a reply? No! certainly it cannot. It is just one volition against another – we willing to go in for life upon a trust or assumption which he, for his part, does not care to make.[1]

As a rule we disbelieve all facts and theories for which we have no use. Clifford's cosmic emotions find no use for Christian feelings. Huxley belabors the bishops because there is no use for sacerdotalism in his scheme of life. Newman, on the contrary, goes over to Romanism, and finds all sorts of reasons good for staying there, because a priestly system is for him an organic need and delight. Why do so few "scientists" even look at the evidence for telepathy, so-called? Because they think, as a leading biologist, now dead, once said to me, that even if such a thing were true, scientists ought to band together to keep it suppressed and concealed. It would undo the uniformity of Nature and all sorts of other things without which scientists cannot carry on their pursuits. But if this very man had been shown something which as a scientist he might *do* with telepathy, he might not only have examined the evidence, but even have found it good enough. This very law which the logicians would impose upon us – if I may give the name of logicians to those who would rule out our willing nature here – is based on nothing but their own natural wish to exclude all elements for which they, in their professional quality of logicians, can find no use.

Evidently, then, our non-intellectual nature does influence our convictions. There are passional tendencies and volitions which run before and others which come after belief, and it is only the latter that are too late for the fair; and they are not too late when the previous passional work has been already in their own direction. Pascal's argument, instead of being powerless, then seems a regular clincher, and is the last stroke needed to make our faith in masses and holy water complete. The state of things is evidently far from simple; and pure insight and logic, whatever they might do ideally, are not the only things that really do produce our creeds.

IV

Our next duty, having recognized this mixed-up state of affairs, is to ask whether it be simply reprehensible and pathological, or whether, on the contrary, we must treat it as a normal element in making up our minds. The thesis I defend is, briefly stated, this: *Our passional nature not only lawfully may, but must, decide an option between propositions, whenever it is a genuine option that cannot by its nature be decided on intellectual grounds;*

[1] Compare the admirable page 310 in S. H. Hodgson's *Time and Space*, London, 1865.

for to say, under such circumstances, "Do not decide, but leave the question open," is itself a passional decision – just like deciding yes or no – and is attended with the same risk of losing the truth. The thesis thus abstractly expressed will, I trust, soon become quite clear. But I must first indulge in a bit more of preliminary work.

V

It will be observed that for the purposes of this discussion we are on "dogmatic" ground – ground, I mean, which leaves systematic philosophical scepticism altogether out of account. The postulate that there is truth, and that it is the destiny of our minds to attain it, we are deliberately resolving to make, though the sceptic will not make it. We part company with him, therefore, absolutely, at this point. But the faith that truth exists, and that our minds can find it, may be held in two ways. We may talk of the *empiricist* way and of the *absolutist* way of believing in truth. The absolutists in this matter say that we not only can attain to knowing truth, but we can *know when* we have attained to knowing it; while the empiricists think that although we may attain it, we cannot infallibly know when. To *know* is one thing, and to know for certain *that* we know is another. One may hold to the first being possible without the second; hence the empiricists and the absolutists, although neither of them is a sceptic in the usual philosophic sense of the term, show very different degrees of dogmatism in their lives.

If we look at the history of opinions, we see that the empiricist tendency has largely prevailed in science, while in philosophy the absolutist tendency has had everything its own way. The characteristic sort of happiness, indeed, which philosophies yield has mainly consisted in the conviction felt by each successive school or system that by it bottom-certitude had been attained. "Other philosophies are collections of opinions, mostly false; *my* philosophy gives standing-ground forever" – who does not recognize in this the key-note of every system worthy of the name? A system, to be a system at all, must come as a *closed* system, reversible in this or that detail, perchance, but in its essential features never!

Scholastic orthodoxy, to which one must always go when one wishes to find perfectly clear statement, has beautifully elaborated this absolutist conviction in a doctrine which it calls that of "objective evidence." If, for example, I am unable to doubt that I now exist before you, that two is less than three, or that if all men are mortal then I am mortal too, it is because these things illumine my intellect irresistibly. The final ground of this objective evidence possessed by certain propositions is the *adaequatio intellectûs nostri cum rê.* The certitude it brings involves an *aptitudinem ad extorquendum certum assensum* on the part of the truth envisaged, and on the side of the subject a *quietem in cognitione,* when once the object is mentally received, that leaves

no possibility of doubt behind; and in the whole transaction nothing operates but the *entitas ipsa* of the object and the *entitas ipsa* of the mind. We slouchy modern thinkers dislike to talk in Latin – indeed, we dislike to talk in set terms at all; but at bottom our own state of mind is very much like this whenever we uncritically abandon ourselves: You believe in objective evidence, and I do. Of some things we feel that we are certain: we know, and we know that we do know. There is something that gives a click inside of us, a bell that strikes twelve, when the hands of our mental clock have swept the dial and meet over the meridian hour. The greatest empiricists among us are only empiricists on reflection: when left to their instincts, they dogmatize like infallible popes. When the Cliffords tell us how sinful it is to be Christians on such "insufficient evidence," insufficiency is really the last thing they have in mind. For them the evidence is absolutely sufficient, only it makes the other way. They believe so completely in an anti-christian order of the universe that there is no living option: Christianity is a dead hypothesis from the start.

VI

But now, since we are all such absolutists by instinct, what in our quality of students of philosophy ought we to do about the fact? Shall we espouse and indorse it? Or shall we treat it as a weakness of our nature from which we must free ourselves, if we can?

I sincerely believe that the latter course is the only one we can follow as reflective men. Objective evidence and certitude are doubtless very fine ideals to play with, but where on this moonlit and dream-visited planet are they found? I am, therefore, myself a complete empiricist so far as my theory of human knowledge goes. I live, to be sure, by the practical faith that we must go on experiencing and thinking over our experience, for only thus can our opinions grow more true; but to hold any one of them – I absolutely do not care which – as if it never could be re-interpretable or corrigible, I believe to be a tremendously mistaken attitude, and I think that the whole history of philosophy will bear me out. There is but one indefectibly certain truth, and that is the truth that pyrrhonistic scepticism itself leaves standing – the truth that the present phenomenon of consciousness exists. That, however, is the bare starting-point of knowledge, the mere admission of a stuff to be philosophized-about. The various philosophies are but so many attempts at expressing what this stuff really is. And if we repair to our libraries what disagreement do we discover! Where is a certainly true answer found? Apart from abstract propositions of comparison (such as two and two are the same as four), propositions which tell us nothing by themselves about concrete reality, we find no proposition ever regarded by anyone as evidently certain that has not either been called a falsehood, or at least had its truth sincerely questioned by someone else. The transcending of the axioms of geometry, not

in play but in earnest, by certain of our contemporaries (as Zöllner and Charles H. Hinton), and the rejection of the whole Aristotelian logic by the Hegelians, are striking instances in point.

No concrete test of what is really true has ever been agreed upon. Some make the criterion external to the moment of perception, putting it either in revelation, the *consensus gentium,* the instincts of the heart, or the systematized experience of the race. Others make the perceptive moment its own test – Descartes, for instance, with his clear and distinct ideas guaranteed by the veracity of God; Reid with his "common-sense"; and Kant with his forms of synthetic judgment *a priori.* The inconceivability of the opposite; the capacity to be verified by sense; the possession of complete organic unity or self-relation, realized when a thing is its own other – are standards which, in turn, have been used. The much lauded objective evidence is never triumphantly there; it is a mere aspiration or *Grenzbegriff*, marking the infinitely remote ideal of our thinking life. To claim that certain truths now possess it, is simply to say that when you think them true and they *are* true, then their evidence is objective, otherwise it is not. But practically one's conviction that the evidence one goes by is of the real objective brand, is only one more subjective opinion added to the lot. For what a contradictory array of opinions have objective evidence and absolute certitude been claimed! The world is rational through and through – its existence is an ultimate brute fact; there is a personal God – a personal God is inconceivable; there is an extra-mental physical world immediately known – the mind can only know its own ideas; a moral imperative exists – obligation is only the resultant of desires; a permanent spiritual principle is in everyone – there are only shifting states of mind; there is an endless chain of causes – there is an absolute first cause; an eternal necessity – a freedom; a purpose – no purpose; a primal One – a primal Many; a universal continuity – an essential discontinuity in things; an infinity – no infinity. There is this – there is that; there is indeed nothing which someone has not thought absolutely true, whilst his neighbor deemed it absolutely false; and not an absolutist among them seems ever to have considered that the trouble may all the time be essential, and that the intellect, even with truth directly in its grasp, may have no infallible signal for knowing whether it be truth or no. When, indeed, one remembers that the most striking practical application to life of the doctrine of objective certitude has been the conscientious labors of the Holy Office of the Inquisition, one feels less tempted than ever to lend the doctrine a respectful ear.

But please observe, now, that when as empiricists we give up the doctrine of objective certitude, we do not thereby give up the quest or hope of truth itself. We still pin our faith on its existence, and still believe that we gain an ever better position towards it by systematically continuing to roll up experiences and think. Our great difference from the scholastic lies in the way we face. The strength of his system lies in the principles, the origin, the *terminus*

a quo of his thought; for us the strength is in the outcome, the upshot, the *terminus ad quem*. Not where it comes from but what it leads to is to decide. It matters not to an empiricist from what quarter an hypothesis may come to him: he may have acquired it by fair means or by foul; passion may have whispered or accident suggested it; but if the total drift of thinking continues to confirm it, that is what he means by its being true.

VII

One more point, small but important, and our preliminaries are done. There are two ways of looking at our duty in the matter of opinion – ways entirely different, and yet ways about whose difference the theory of knowledge seems hitherto to have shown very little concern. *We must know the truth*; and *we must avoid error* – these are our first and great commandments as would-be knowers; but they are not two ways of stating an identical commandment, they are two separable laws. Although it may indeed happen that when we believe the truth *A*, we escape as an incidental consequence from believing the falsehood *B*, it hardly ever happens that by merely disbelieving *B* we necessarily believe *A*. We may in escaping *B* fall into believing other falsehoods, *C* or *D*, just as bad as *B*; or we may escape *B* by not believing anything at all, not even *A*.

Believe truth! Shun error! – these, we see, are two materially different laws; and by choosing between them we may end by coloring differently our whole intellectual life. We may regard the chase for truth as paramount, and the avoidance of error as secondary; or we may, on the other hand, treat the avoidance of error as more imperative, and let truth take its chance. Clifford, in the instructive passage which I have quoted, exhorts us to the latter course. Believe nothing, he tells us, keep your mind in suspense forever, rather than by closing it on insufficient evidence incur the awful risk of believing lies. You, on the other hand, may think that the risk of being in error is a very small matter when compared with the blessings of real knowledge, and be ready to be duped many times in your investigation rather than postpone indefinitely the chance of guessing true. I myself find it impossible to go with Clifford. We must remember that these feelings of our duty about either truth or error are in any case only expressions of our passional life. Biologically considered, our minds are as ready to grind out falsehood as veracity, and he who says "Better go without belief forever than believe a lie!" merely shows his own preponderant private horror of becoming a dupe. He may be critical of many of his desires and fears, but this fear he slavishly obeys. He cannot imagine any one questioning its binding force. For my own part, I have also a horror of being duped; but I can believe that worse things than being duped may happen to a man in this world: so Clifford's exhortation has to my ears a thoroughly fantastic sound. It is like a general informing his soldiers that it

is better to keep out of battle forever than to risk a single wound. Not so are victories either over enemies or over nature gained. Our errors are surely not such awfully solemn things. In a world where we are so certain to incur them in spite of all our caution, a certain lightness of heart seems healthier than this excessive nervousness on their behalf. At any rate, it seems the fittest thing for the empiricist philosopher.

VIII

And now, after all this introduction, let us go straight at our question. I have said, and now repeat it, that not only as a matter of fact do we find our passional nature influencing us in our opinions, but that there are some options between opinions in which this influence must be regarded both as an inevitable and as a lawful determinant of our choice.

I fear here that some of you my hearers will begin to scent danger, and lend an inhospitable ear. Two first steps of passion you have indeed had to admit as necessary – we must think so as to avoid dupery, and we must think so as to gain truth; but the surest path to those ideal consummations, you will probably consider, is from now onwards to take no further passional step.

Well, of course, I agree as far as the facts will allow. Wherever the option between losing truth and gaining it is not momentous, we can throw the chance of *gaining truth* away, and at any rate save ourselves from any chance of *believing falsehood*, by not making up our minds at all till objective evidence has come. In scientific questions, this is almost always the case; and even in human affairs in general, the need of acting is seldom so urgent that a false belief to act on is better than no belief at all. Law courts, indeed, have to decide on the best evidence attainable for the moment, because a judge's duty is to make law as well as to ascertain it, and (as a learned judge once said to me) few cases are worth spending much time over: the great thing is to have them decided on *any* acceptable principle, and got out of the way. But in our dealings with objective nature we obviously are recorders, not makers, of the truth; and decisions for the mere sake of deciding promptly and getting on to the next business would be wholly out of place. Throughout the breadth of physical nature facts are what they are quite independently of us, and seldom is there any such hurry about them that the risks of being duped by believing a premature theory need be faced. The questions here are always trivial options, the hypotheses are hardly living (at any rate not living for us spectators), the choice between believing truth or falsehood is seldom forced. The attitude of sceptical balance is therefore the absolutely wise one if we would escape mistakes. What difference, indeed, does it make to most of us whether we have or have not a theory of the Röntgen rays, whether we believe or not in mind-stuff, or have a conviction about the causality of conscious states? It makes no difference. Such options are not forced on us. On every

account it is better not to make them, but still keep weighing reasons *pro et contra* with an indifferent hand.

I speak, of course, here of the purely judging mind. For purposes of discovery such indifference is to be less highly recommended, and science would be far less advanced than she is if the passionate desires of individuals to get their own faiths confirmed had been kept out of the game. See for example the sagacity which Spencer and Weismann now display. On the other hand, if you want an absolute duffer in an investigation, you must, after all, take the man who has no interest whatever in its results: he is the warranted incapable, the positive fool. The most useful investigator, because the most sensitive observer, is always he whose eager interest in one side of the question is balanced by an equally keen nervousness lest he become deceived.[2] Science has organized this nervousness into a regular *technique*, her so-called method of verification; and she has fallen so deeply in love with the method that one may even say she has ceased to care for truth by itself at all. It is only truth as technically verified that interests her. The truth of truths might come in merely affirmative form, and she would decline to touch it. Such truth as that, she might repeat with Clifford, would be stolen in defiance of her duty to mankind. Human passions, however, are stronger than technical rules. "Le coeur a ses raisons," as Pascal says, "que la raison ne connaît point"; and however indifferent to all but the bare rules of the game the umpire, the abstract intellect, may be, the concrete players who furnish him the materials to judge of are usually, each one of them, in love with some pet "live hypothesis" of his own. Let us agree, however, that wherever there is no forced option, the dispassionately judicial intellect with no pet hypothesis, saving us, as it does, from dupery at any rate, ought to be our ideal.

The question next arises: Are there not somewhere forced options in our speculative questions, and can we (as men who may be interested at least as much in positively gaining truth as in merely escaping dupery) always wait with impunity till the coercive evidence shall have arrived? It seems *a priori* improbable that the truth should be so nicely adjusted to our needs and powers as that. In the great boarding-house of nature, the cakes and the butter and the syrup seldom come out so even and leave the plates so clean. Indeed, we should view them with scientific suspicion if they did.

IX

Moral questions immediately present themselves as questions whose solution cannot wait for sensible proof. A moral question is a question not of what sensibly exists, but of what is good, or would be good if it did exist. Science

[2] Compare Wilfrid Ward's Essay, "The Wish to Believe," in his *Witnesses to the Unseen*, Macmillan & Co., 1893.

can tell us what exists; but to compare the *worths*, both of what exists and of what does not exist, we must consult not science, but what Pascal calls our heart. Science herself consults her heart when she lays it down that the infinite ascertainment of fact and correction of false belief are the supreme goods for man. Challenge the statement and science can only repeat it oracularly, or else prove it by showing that such ascertainment and correction bring man all sorts of other goods which man's heart in turn declares. The question of having moral beliefs at all or not having them is decided by our will. Are our moral preferences true or false, or are they only odd biological phenomena, making things good or bad for *us*, but in themselves indifferent? How can your pure intellect decide? If your heart does not *want* a world of moral reality, your head will assuredly never make you believe in one. Mephistophelian scepticism, indeed, will satisfy the head's play-instincts much better than any rigorous idealism can. Some men (even at the student age) are so naturally cool-hearted that the moralistic hypothesis never has for them any pungent life, and in their supercilious presence the hot young moralist always feels strangely ill at ease. The appearance of knowingness is on their side, of *naïveté* and gullibility on his. Yet, in the inarticulate heart of him, he clings to it that he is not a dupe, and that there is a realm in which (as Emerson says) all their wit and intellectual superiority is no better than the cunning of a fox. Moral scepticism can no more be refuted or proved by logic than intellectual scepticism can. When we stick to it that there *is* truth (be it of either kind), we do so with our whole nature, and resolve to stand or fall by the results. The sceptic with his whole nature adopts the doubting attitude; but which of us is the wiser, Omniscience only knows.

Turn now from these wide questions of good to a certain class of questions of fact, questions concerning personal relations, states of mind between one man and another. *Do you like me or not?* – for example. Whether you do or not depends, in countless instances, on whether I meet you half-way, am willing to assume that you must like me, and show you trust and expectation. The previous faith on my part in your liking's existence is in such cases what makes your liking come. But if I stand aloof, and refuse to budge an inch until I have objective evidence, until you shall have done something apt, as the absolutists say, *ad extorquendum assensum meum*, ten to one your liking never comes. How many women's hearts are vanquished by the mere sanguine insistence of some man that they *must* love him! he will not consent to the hypothesis that they cannot. The desire for a certain kind of truth here brings about that special truth's existence; and so it is in innumerable cases of other sorts. Who gains promotions, boons, appointments, but the man in whose life they are seen to play the part of live hypotheses, who discounts them, sacrifices other things for their sake before they have come, and takes risks for them in advance? His faith acts on the powers above him as a claim, and creates its own verification.

A social organism of any sort whatever, large or small, is what it is because each member proceeds to his own duty with a trust that the other members will simultaneously do theirs. Wherever a desired result is achieved by the co-operation of many independent persons, its existence as a fact is a pure consequence of the precursive faith in one another of those immediately concerned. A government, an army, a commercial system, a ship, a college, an athletic team, all exist on this condition, without which not only is nothing achieved, but nothing is even attempted. A whole train of passengers (individually brave enough) will be looted by a few highwaymen, simply because the latter can count on one another, while each passenger fears that if he makes a movement of resistance, he will be shot before any one else backs him up. If we believed that the whole car-full would rise at once with us, we should each severally rise, and train-robbing would never even be attempted. There are, then, cases where a fact cannot come at all unless a preliminary faith exists in its coming. *And where faith in a fact can help create the fact*, that would be an insane logic which should say that faith running ahead of scientific evidence is the "lowest kind of immorality" into which a thinking being can fall. Yet such is the logic by which our scientific absolutists pretend to regulate our lives!

X

In truths dependent on our personal action, then, faith based on desire is certainly a lawful and possibly an indispensable thing.

But now, it will be said, these are all childish human cases, and have nothing to do with great cosmical matters, like the question of religious faith. Let us then pass on to that. Religions differ so much in their accidents that in discussing the religious question we must make it very generic and broad. What then do we now mean by the religious hypothesis? Science says things are; morality says some things are better than other things; and religion says essentially two things.

First, she says that the best things are the more eternal things, the overlapping things, the things in the universe that throw the last stone, so to speak, and say the final word. "Perfection is eternal" – this phrase of Charles Secrétan seems a good way of putting this first affirmation of religion, an affirmation which obviously cannot yet be verified scientifically at all. The second affirmation of religion is that we are better off even now if we believe her first affirmation to be true.

Now, let us consider what the logical elements of this situation are *in case the religious hypothesis in both its branches be really true.* (Of course, we must admit that possibility at the outset. If we are to discuss the question at all, it must involve a living option. If for any of you religion be a hypothesis that cannot, by any living possibility be true, then you need go no farther. I speak

to the "saving remnant" alone.) So proceeding, we see, first, that religion offers itself as a *momentous* option. We are supposed to gain, even now, by our belief, and to lose by our non-belief, a certain vital good. Secondly, religion is a *forced* option, so far as that good goes. We cannot escape the issue by remaining sceptical and waiting for more light, because, although we do avoid error in that way *if religion be untrue*, we lose the good, *if it be true*, just as certainly as if we positively chose to disbelieve. It is as if a man should hesitate indefinitely to ask a certain woman to marry him because he was not perfectly sure that she would prove an angel after he brought her home. Would he not cut himself off from that particular angel-possibility as decisively as if he went and married some one else? Scepticism, then, is not avoidance of option; it is option of a certain particular kind of risk. *Better risk loss of truth than chance of error* – that is your faith-vetoer's exact position. He is actively playing his stake as much as the believer is; he is backing the field against the religious hypothesis, just as the believer is backing the religious hypothesis against the field. To preach scepticism to us as a duty until "sufficient evidence" for religion be found, is tantamount therefore to telling us, when in presence of the religious hypothesis, that to yield to our fear of its being error is wiser and better than to yield to our hope that it may be true. It is not intellect against all passions, then; it is only intellect with one passion laying down its law. And by what, forsooth, is the supreme wisdom of this passion warranted? Dupery for dupery, what proof is there that dupery through hope is so much worse than dupery through fear? I, for one, can see no proof; and I simply refuse obedience to the scientist's command to imitate his kind of option, in a case where my own stake is important enough to give me the right to choose my own form of risk. If religion be true and the evidence for it be still insufficient, I do not wish, by putting your extinguisher upon my nature (which feels to me as if it had after all some business in this matter), to forfeit my sole chance in life of getting upon the winning side – that chance depending, of course, on my willingness to run the risk of acting as if my passional need of taking the world religiously might be prophetic and right.

All this is on the supposition that it really may be prophetic and right, and that, even to us who are discussing the matter, religion is a live hypothesis which may be true. Now, to most of us religion comes in a still farther way that makes a veto on our active faith even more illogical. The more perfect and more eternal aspect of the universe is represented in our religions as having personal form. The universe is no longer a mere *It* to us, but a *Thou*, if we are religious; and any relation that may be possible from person to person might be possible here. For instance, although in one sense we are passive portions of the universe, in another we show a curious autonomy, as if we were small active centers on our own account. We feel, too, as if the appeal of religion to us were made to our own active good-will, as if evidence

might be forever withheld from us unless we met the hypothesis half-way. To take a trivial illustration: just as a man who in a company of gentlemen made no advances, asked a warrant for every concession, and believed no one's word without proof, would cut himself off by such churlishness from all the social rewards that a more trusting spirit would earn – so here, one who should shut himself up in snarling logicality and try to make the gods extort his recognition willy-nilly, or not get it at all, might cut himself off forever from his only opportunity of making the gods' acquaintance. This feeling, forced on us we know not whence, that by obstinately believing that there are gods (although not to do so would be so easy both for our logic and our life) we are doing the universe the deepest service we can, seems part of the living essence of the religious hypothesis. If the hypothesis *were* true in all its parts, including this one, then pure intellectualism, with its veto on our making willing advances, would be an absurdity; and some participation of our sympathetic nature would be logically required. I, therefore, for one, cannot see my way to accepting the agnostic rules for truth-seeking, or wilfully agree to keep my willing nature out of the game. I cannot do so for this plain reason, that *a rule of thinking which would absolutely prevent me from acknowledging certain kinds of truth if those kinds of truth were really there, would be an irrational rule.* That for me is the long and short of the formal logic of the situation, no matter what the kinds of truth might materially be.

I confess I do not see how this logic can be escaped. But sad experience makes me fear that some of you may still shrink from radically saying with me, *in abstracto*, that we have the right to believe at our own risk any hypothesis that is live enough to tempt our will. I suspect, however, that if this is so, it is because you have got away from the abstract logical point of view altogether, and are thinking (perhaps without realizing it) of some particular religious hypothesis which for you is dead. The freedom to "believe what we will" you apply to the case of some patent superstition; and the faith you think of is the faith defined by the schoolboy when he said, "Faith is when you believe something that you know ain't true." I can only repeat that this is misapprehension. *In concreto*, the freedom to believe can only cover living options which the intellect of the individual cannot by itself resolve; and living options never seem absurdities to him who has them to consider. When I look at the religious question as it really puts itself to concrete men, and when I think of all the possibilities which both practically and theoretically it involves, then this command that we shall put a stopper on our heart, instincts, and courage, and *wait* – acting of course meanwhile more or less as if religion were *not* true[3] – till doomsday, or till such time as our intellect and senses working

[3] Since belief is measured by action, he who forbids us to believe religion to be true, necessarily also forbids us to act as we should if we did believe it to be true. The whole defense of religious faith hinges upon action. If the action required or inspired by the religious

together may have raked in evidence enough – this command, I say, seems to me the queerest idol ever manufactured in the philosophic cave. Were we scholastic absolutists, there might be more excuse. If we had an infallible intellect with its objective certitudes, we might feel ourselves disloyal to such a perfect organ of knowledge in not trusting to it exclusively, in not waiting for its releasing word. But if we are empiricists, if we believe that no bell in us tolls to let us know for certain when truth is in our grasp, then it seems a piece of idle fantasticality to preach so solemnly our duty of waiting for the bell. Indeed we *may* wait if we will – I hope you do not think that I am denying that – but if we do so, we do so at our peril as much as if we believed. In either case we *act,* taking our life in our hands. No one of us ought to issue vetoes to the other, nor should we bandy words of abuse. We ought, on the contrary, delicately and profoundly to respect one another's mental freedom – then only shall we bring about the intellectual republic; then only shall we have that spirit of inner tolerance without which all our outer tolerance is soulless, and which is empiricism's glory; then only shall we live and let live, in speculative as well as in practical things.

I began by a reference to Fitzjames Stephen; let me end by a quotation from him. "What do you think of yourself? What do you think of the world? ... These are questions with which all must deal as it seems good to them. They are riddles of the Sphinx, and in some way or other we must deal with them.... In all important transactions of life we have to take a leap in the dark.... If we decide to leave the riddles unanswered, that is a choice; if we waver in our answer, that, too, is a choice; but whatever choice we make, we make it at our peril. If a man chooses to turn his back altogether on God and the future, no one can prevent him; no one can show beyond reasonable doubt that he is mistaken. If a man thinks otherwise, and acts as he thinks, I do not see how any one can prove that *he* is mistaken. Each must act as he thinks best, and if he is wrong so much the worse for him. We stand on a mountain pass in the midst of whirling snow and blinding mist, through which we get glimpses now and then of paths which may be deceptive. If we stand still, we shall be frozen to death. If we take the wrong road we shall be dashed to pieces. We do not certainly know whether there is any right one. What must we do? 'Be strong and of a good courage.' Act for the best, hope for the best, and take what comes.... If death ends all, we cannot meet death better."[4]

hypothesis is in no way different from that dictated by the naturalistic hypothesis, then religious faith is a pure superfluity, better pruned away, and controversy about its legitimacy is a piece of idle trifling, unworthy of serious minds. I myself believe, of course, that the religious hypothesis gives to the world an expression which specifically determines our reactions, and makes them in a large part unlike what they might be on a purely naturalistic scheme of belief.

[4] *Liberty, Equality, Fraternity*, p. 353, 2d edition. London, 1874.

PHILOSOPHICAL CONCEPTIONS AND PRACTICAL RESULTS

William James, "Philosophical Conceptions and Practical Results." *The University* (of California) *Chronicle* 1 (September 1898): 287–310.

An occasion like the present would seem to call for an absolutely untechnical discourse. I ought to speak of something connected with life rather than with logic. I ought to give a message with a practical outcome and an emotional musical accompaniment, so to speak, fitted to interest men as men, and yet also not altogether to disappoint philosophers – since philosophers, let them be as queer as they will, still are men in the secret recesses of their hearts, even here at Berkeley. I ought, I say, to produce something simple enough to catch and inspire the rest of you, and yet with just enough of ingenuity and oddity about it to keep the members of the Philosophical Union from yawning and letting their attention wander away.

I confess that I have something of this kind in my mind, a perfectly ideal discourse for the present occasion. Were I to set it down on paper, I verily believe it would be regarded by everyone as the final word of philosophy. It would bring theory down to a single point, at which every human being's practical life would begin. It would solve all the antinomies and contradictions, it would let loose all the right impulses and emotions; and everyone, on hearing it, would say, "Why, that *is* the truth! – *that* is what I have been believing, that is what I have really been living on all this time, but I never could find the words for it before. All that eludes, all that flickers and twinkles, all that invites and vanishes even whilst inviting, is here made a solidity and a possession. Here is the end of unsatisfactoriness, here the beginning of unimpeded clearness, joy, and power." Yes, my friends, I have such a discourse within me! But, do not judge me harshly, I cannot produce it on the present occasion. I humbly apologize; I have come across the continent to this wondrous Pacific Coast – to this Eden, not of the mythical antiquity, but of the solid future of mankind – I ought to give you something worthy of your hospitality, and not altogether unworthy of your great destiny, to help cement our rugged East and your wondrous West together in a spiritual bond – and yet, and yet, and yet, I simply cannot. I have tried to articulate it, but it will not come. Philosophers are after all like poets. They are path-finders. What everyone can feel, what everyone can know in the bone

and marrow of him, they sometimes can find words for and express. The words and thoughts of the philosophers are not exactly the words and thoughts of the poets – worse luck. But both alike have the same function. They are, if I may use a simile, so many spots, or blazes – blazes made by the axe of the human intellect on the trees of the otherwise trackless forest of human experience. They give you somewhere to go from. They give you a direction and a place to reach. They do not give you the integral forest with all its sunlit glories and its moonlit witcheries and wonders. Ferny dells, and mossy waterfalls, and secret magic nooks escape you, owned only by the wild things to whom the region is a home. Happy they without the need of blazes! But to us the blazes give a sort of ownership. We can now use the forest, wend across it with companions, and enjoy its quality. It is no longer a place merely to get lost in and never return. The poet's words and the philosopher's phrases thus are helps of the most genuine sort, giving to all of us hereafter the freedom of the trails they made. Though they create nothing, yet for this marking and fixing function of theirs we bless their names and keep them on our lips, even whilst the thin and spotty and half-casual character of their operations is evident to our eyes.

No one like the path-finder himself feels the immensity of the forest, or knows the accidentality of his own trails. Columbus, dreaming of the ancient East, is stopped by poor pristine simple America, and gets no farther on that day; and the poets and philosophers themselves know as no one else knows that what their formulas express leaves unexpressed almost everything that they organically divine and feel. So I feel that there is a center in truth's forest where I have never been: to track it out and get there is the secret spring of all my poor life's philosophic efforts; at moments I almost strike into the final valley, there is a gleam of the end, a sense of certainty, but always there comes still another ridge, so my blazes merely circle towards the true direction; and although now, if ever, would be the fit occasion, yet I cannot take you to the wondrous hidden spot to-day. To-morrow must be, or to-morrow, or to-morrow, and pretty surely death will overtake me ere the promise is fulfilled.

Of such postponed achievements do the lives of all philosophers consist. Truth's fullness is elusive; ever not quite, not quite! So we fall back on the preliminary blazes – a few formulas, a few technical conceptions, a few verbal pointers – which at least define the initial direction of the trail. And that, to my sorrow, is all that I can do here at Berkeley to-day. Inconclusive I must be, and merely suggestive, though I will try to be as little technical as I can.

I will seek to define with you merely what seems to be the most likely direction in which to start upon the trail of truth. Years ago this direction was given to me by an American philosopher whose home is in the East, and whose published works, few as they are and scattered in periodicals, are no fit expression of his powers. I refer to Mr. Charles S. Peirce, with whose very existence as a philosopher I dare say many of you are unacquainted. He is one

of the most original of contemporary thinkers; and the principle of practicalism – or pragmatism, as he called it, when I first heard him enunciate it at Cambridge in the early '70's – is the clue or compass by following which I find myself more and more confirmed in believing we may keep our feet upon the proper trail.

Peirce's principle, as we may call it, may be expressed in a variety of ways, all of them very simple. In the *Popular Science Monthly* for January, 1878, he introduces it as follows: The soul and meaning of thought, he says, can never be made to direct itself towards anything but the production of belief, belief being the demicadence which closes a musical phrase in the symphony of our intellectual life. Thought in movement has thus for its only possible motive the attainment of thought at rest. But when our thought about an object has found its rest in belief, then our action on the subject can firmly and safely begin. Beliefs, in short, are really rules for action; and the whole function of thinking is but one step in the production of habits of action. If there were any part of a thought that made no difference in the thought's practical consequences, then that part would be no proper element of the thought's significance. Thus the same thought may be clad in different words; but if the different words suggest no different conduct, they are mere outer accretions, and have no part in the thought's meaning. If, however, they determine conduct differently, they are essential elements of the significance. "Please open the door," and, "*Veuillez ouvrir la porte*," in French, mean just the same thing; but "D—n you, open the door," although in English, *means* something very different. Thus to develop a thought's meaning we need only determine what conduct it is fitted to produce; that conduct is for us its sole significance. And the tangible fact at the root of all our thought-distinctions, however subtle, is that there is no one of them so fine as to consist in anything but a possible difference of practice. To attain perfect clearness in our thoughts of an object, then, we need only consider what effects of a conceivably practical kind the object may involve – what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, then, is for us the whole of our conception of the object, so far as that conception has positive significance at all.

This is the principle of Peirce, the principle of pragmatism. I think myself that it should be expressed more broadly than Mr. Peirce expresses it. The ultimate test for us of what a truth means is indeed the conduct it dictates or inspires. But it inspires that conduct because it first foretells some particular turn to our experience which shall call for just that conduct from us. And I should prefer for our purposes this evening to express Peirce's principle by saying that the effective meaning of any philosophic proposition can always be brought down to some particular consequence, in our future practical experience, whether active or passive; the point lying rather in the fact that the experience must be particular, than in the fact that it must be active.

To take in the importance of this principle, one must get accustomed to applying it to concrete cases. Such use as I am able to make of it convinces me that to be mindful of it in philosophical disputations tends wonderfully to smooth out misunderstandings and to bring in peace. If it did nothing else, then, it would yield a sovereignly valuable rule of method for discussion. So I shall devote the rest of this precious hour with you to its elucidation, because I sincerely think that if you once grasp it, it will shut your steps out from many an old false opening, and head you in the true direction for the trail.

One of its first consequences is this. Suppose there are two different philosophical definitions, or propositions, or maxims, or what not, which seem to contradict each other, and about which men dispute. If, by supposing the truth of the one, you can foresee no conceivable practical consequence to anybody at any time or place, which is different from what you would foresee if you supposed the truth of the other, why then the difference between the two propositions is no difference – it is only a specious and verbal difference, unworthy of further contention. Both formulas mean radically the same thing, although they may say it in such different words. It is astonishing to see how many philosophical disputes collapse into insignificance the moment you subject them to this simple test. There can be no difference which doesn't make a difference – no difference in abstract truth which does not express itself in a difference of concrete fact, and of conduct consequent upon the fact, imposed on somebody, somehow, somewhere, and somewhen. It is true that a certain shrinkage of values often seems to occur in our general formulas when we measure their meaning in this prosaic and practical way. They diminish. But the vastness that is merely based on vagueness is a false appearance of importance, and not a vastness worth retaining. The *x*'s, *y*'s, and *z*'s always do shrivel, as I have heard a learned friend say, whenever at the end of your algebraic computation they change into so many plain *a*'s, *b*'s, and *c*'s; – but the whole function of algebra is, after all, to get them into that more definite shape; and the whole function of philosophy ought to be to find out what definite difference it will make to you and me, at definite instants of our life, if this world-formula or that world-formula be the one which is true.

If we start off with an impossible case, we shall perhaps all the more clearly see the use and scope of our principle. Let us, therefore, put ourselves, in imagination, in a position from which no forecasts of consequence, no dictates of conduct, can possibly be made, so that the principle of pragmatism finds no field of application. Let us, I mean, assume that the present moment is the absolutely last moment of the world, with bare nonentity beyond it, and no hereafter for either experience or conduct.

Now I say that in that case there would be no sense whatever in some of our most urgent and envenomed philosophical and religious debates. The

question, "Is matter the producer of all things, or is a God there too?" would, for example, offer a perfectly idle and insignificant alternative if the world were finished and no more of it to come. Many of us, most of us, I think, now feel as if a terrible coldness and deadness would come over the world were we forced to believe that no informing spirit or purpose had to do with it, but it merely accidentally had come. The actually experienced details of fact might be the same on either hypothesis, some sad, some joyous; some rational, some odd and grotesque; but without a God behind them, we think they would have something ghastly, they would tell no genuine story, there would be no speculation in those eyes that they do glare with. With the God, on the other hand, they would grow solid, warm, and altogether full of real significance.

But I say that such an alternation of feelings, reasonable enough in a consciousness that is prospective, as ours now is, and whose world is partly yet to come, would be absolutely senseless and irrational in a purely retrospective consciousness summing up a world already past. For such a consciousness, no emotional interest could attach to the alternative. The problem would be purely intellectual; and if unaided matter could, with any scientific plausibility, be shown to cipher out the actual facts, then not the faintest shadow ought to cloud the mind, of regret for the God that by the same ciphering would prove needless and disappear from our belief.

For just consider the case sincerely, and say what would be the *worth* of such a God if he *were* there, with his work accomplished and his world run down. He would be worth no more than just that world was worth. To that amount of result, with its mixed merits and defects, his creative power could attain, but go no farther. And since there is to be no future; since the whole value and meaning of the world has been already paid in and actualized in the feelings that went with it in the passing, and now go with it in the ending; since it draws no supplemental significance (such as our real world draws) from its function of preparing something yet to come; why then, by it we take God's measure, as it were. He is the Being who could once for all do *that*; and for that much we are thankful to him, but for nothing more. But now, on the contrary hypothesis, namely, that the bits of matter following their "laws" could make that world and do no less, should we not be just as thankful to them? Wherein should we suffer loss, then, if we dropped God as an hypothesis and made the matter alone responsible? Where would the special deadness, "crassness," and ghastliness come in? And how, experience being what it is once for all, would God's presence in it make it any more "living," any richer in our sight?

Candidly, it is impossible to give any answer to this question. The actually experienced world is supposed to be the same in its details on either hypothesis, "the same, for our praise or blame," as Browning says. It stands there indefeasibly; a gift which can't be taken back. Calling matter the cause

of it retracts no single one of the items that have made it up, nor does calling God the cause augment them. They are the God or the atoms, respectively, of just that and no other world. The God, if there, has been doing just what atoms could do – appearing in the character of atoms, so to speak – and earning such gratitude as is due to atoms, and no more. If his presence lends no different turn or issue to the performance, it surely can lend it no increase of dignity. Nor would indignity come to it were he absent, and did the atoms remain the only actors on the stage. When a play is once over, and the curtain down, you really make it no better by claiming an illustrious genius for its author, just as you make it no worse by calling him a common hack.

Thus if no future detail of experience or conduct is to be deduced from our hypothesis, the debate between materialism and theism becomes quite idle and insignificant. Matter and God in that event mean exactly the same thing – the power, namely, neither more nor less, that can make just this mixed, imperfect, yet completed world – and the wise man is he who in such a case would turn his back on such a supererogatory discussion. Accordingly most men instinctively – and a large class of men, the so-called positivists or scientists, deliberately – do turn their backs on philosophical disputes from which nothing in the line of definite future consequences can be seen to follow. The verbal and empty character of our studies is surely a reproach with which you of the Philosophical Union are but too sadly familiar. An escaped Berkeley student said to me at Harvard the other day – he had never been in the philosophical department here – "Words, words, are all that you philosophers care for." We philosophers think it all unjust; and yet, if the principle of pragmatism be true, it is a perfectly sound reproach unless the metaphysical alternatives under investigation can be shown to have alternative practical outcomes, however delicate and distant these may be. The common man and the scientist can discover no such outcomes. And if the metaphysician can discern none either, the common man and scientist certainly are in the right of it, as against him. His science is then but pompous trifling; and the endowment of a professorship for such a being would be something really absurd.

Accordingly, in every genuine metaphysical debate some practical issue, however remote, is really involved. To realize this, revert with me to the question of materialism or theism; and place yourselves this time in the real world we live in, the world that has a future, that is yet uncompleted whilst we speak. In this unfinished world the alternative of "materialism or theism?" is intensely practical; and it is worth while for us to spend some minutes of our hour in seeing how truly this is the case.

How, indeed, does the programme differ for us, according as we consider that the facts of experience up to date are purposeless configurations of atoms moving according to eternal elementary laws, or that on the other hand they are due to the providence of God? As far as the past facts go, indeed there

is no difference. These facts are in, are bagged, are captured; and the good that's in them is gained, be the atoms or be the God their cause. There are accordingly many materialists about us to-day who, ignoring altogether the future and practical aspects of the question, seek to eliminate the odium attaching to the word materialism, and even to eliminate the word itself, by showing that, if matter could give birth to all these gains, why then matter, functionally considered, is just as divine an entity as God, in fact coalesces with God, is what you mean by God. Cease, these persons advise us, to use either of these terms, with their outgrown opposition. Use terms free of the clerical connotations on the one hand; of the suggestion of grossness, coarseness, ignobility, on the other. Talk of the primal mystery, of the unknowable energy, of the one and only power, instead of saying either God or matter. This is the course to which Mr. Spencer urges us at the end of the first volume of his Psychology. In some well-written pages he there shows us that a "matter" so infinitely subtile, and performing motions as inconceivably quick and fine as modern science postulates in her explanations, has no trace of grossness left. He shows that the conception of spirit, as we mortals hitherto have framed it, is itself too gross to cover the exquisite complexity of Nature's facts. Both terms, he says, are but symbols, pointing to that one unknowable reality in which their oppositions cease.

Throughout these remarks of Mr. Spencer, eloquent, and even noble in a certain sense, as they are, he seems to think that the dislike of the ordinary man to materialism comes from a purely aesthetic disdain of matter, as some thing gross in itself, and vile and despicable. Undoubtedly such aesthetic disdain of matter has played a part in philosophic history. But it forms no part whatever of an intelligent modern man's dislikes. Give him a matter bound forever by its laws to lead our world nearer and nearer to perfection, and any rational man will worship that matter as readily as Mr. Spencer worships his own so-called unknowable power. It not only has made for righteousness up to date, but it will make for righteousness forever; and that is all we need. Doing practically all that a God can do, it is equivalent to God, its function is a God's function, and in a world in which a God would be superfluous; from such a world a God could never lawfully be missed.

But *is* the matter by which Mr. Spencer's process of cosmic evolution is carried on any such principle of never-ending perfection as this? Indeed it is not, for the future end of every cosmically evolved thing or system of things is tragedy; and Mr. Spencer, in confining himself to the aesthetic and ignoring the practical side of the controversy, has really contributed nothing serious to its relief. But apply now our principle of practical results, and see what a vital significance the question of materialism or theism immediately acquires.

Theism and materialism, so indifferent when taken retrospectively, point when we take them prospectively to wholly different practical consequences, to opposite outlooks of experience. For, according to the theory of mechanical

evolution, the laws of redistribution of matter and motion, though they are certainly to thank for all the good hours which our organisms have ever yielded us and for all the ideals which our minds now frame, are yet fatally certain to undo their work again, and to redissolve everything that they have once evolved. You all know the picture of the last foreseeable state of the dead universe, as evolutionary science gives it forth. I cannot state it better than in Mr. Balfour's words: "The energies of our system will decay, the glory of the sun will be dimmed, and the earth, tideless and inert, will no longer tolerate the race which has for a moment disturbed its solitude. Man will go down into the pit, and all his thoughts will perish. The uneasy consciousness which in this obscure corner has for a brief space broken the contented silence of the universe, will be at rest. Matter will know itself no longer. 'Imperishable monuments' and 'immortal deeds', death itself, and love stronger than death, will be as if they had not been. Nor will anything that is, be better or worse for all that the labor, genius, devotion, and suffering of man have striven through countless ages to effect."[1]

That is the sting of it, that in the vast driftings of the cosmic weather, though many a jewelled shore appears, and many an enchanted cloud-bank floats away, long lingering ere it be dissolved – even as our world now lingers, for our joy – yet when these transient products are gone, nothing, absolutely *nothing* remains, to represent those particular qualities, those elements of preciousness which they may have enshrined. Dead and gone are they, gone utterly from the very sphere and room of being. Without an echo; without a memory; without an influence on aught that may come after, to make it care for similar ideals. This utter final wreck and tragedy is of the essence of scientific materialism as at present understood. The lower and not the higher forces are the eternal forces, or the last surviving forces within the only cycle of evolution which we can definitely see. Mr. Spencer believes this as much as anyone; so why should he argue with us as if we were making silly aesthetic objections to the "grossness" of "matter and motion" – the principles of his philosophy – when what really dismays us in it is the disconsolateness of its ulterior practical results?

No, the true objection to materialism is not positive but negative. It would be farcical at this day to make complaint of it for what it is, for "grossness." Grossness is what grossness *does* – we now know *that*. We make complaint of it, on the contrary, for what it is *not* – not a permanent warrant for our more ideal interests, not a fulfiller of our remotest hopes.

The notion of God, on the other hand, however inferior it may be in clearness to those mathematical notions so current in mechanical philosophy, has at least this practical superiority over them, that it guarantees an ideal

[1] *The Foundations of Belief*, p. 30.

order that shall be permanently preserved. A world with a God in it to say the last word, may indeed burn up or freeze, but we then think of Him as still mindful of the old ideals and sure to bring them elsewhere to fruition; so that, where He is, tragedy is only provisional and partial, and shipwreck and dissolution not the absolutely final things. This need of an eternal moral order is one of the deepest needs of our breast. And those poets, like Dante and Wordsworth, who live on the conviction of such an order, owe to that fact the extraordinary tonic and consoling power of their verse. Here then, in these different emotional and practical appeals, in these adjustments of our concrete attitudes of hope and expectation, and all the delicate consequences which their differences entail, lie the real meanings of materialism and theism – not in hair-splitting abstractions about matter's inner essence, or about the metaphysical attributes of God. Materialism means simply the denial that the moral order is eternal, and the cutting off of ultimate hopes; theism means the affirmation of an eternal moral order and the letting loose of hope. Surely here is an issue genuine enough, for any one who feels it; and, as long as men are men, it will yield matter for serious philosophic debate. Concerning this question, at any rate, the positivists and pooh-pooh-ers of metaphysics are in the wrong.

But possibly some of you may still rally to their defense. Even whilst admitting that theism and materialism make different prophecies of the world's future, you may your selves pooh-pooh the difference as something so infinitely remote as to mean nothing for a sane mind. The essence of a sane mind, you may say, is to take shorter views, and to feel no concern about such chimaeras as the latter end of the world. Well, I can only say that if you say this, you do injustice to human nature. Religious melancholy is not disposed of by a simple flourish of the word insanity. The absolute things, the last things, the overlapping things, are the truly philosophic concern; all superior minds feel seriously about them, and the mind with the shortest views is simply the mind of the more shallow man.

However, I am willing to pass over these very distant outlooks on the ultimate, if any of you so insist. The theistic controversy can still serve to illustrate the principle of pragmatism for us well enough, without driving us so far afield. If there be a God, it is not likely that he is confined solely to making differences in the world's latter end; he probably makes differences all along its course. Now the principle of practicalism says that the very meaning of the conception of God lies in those differences which must be made in our experience if the conception be true. God's famous inventory of perfections, as elaborated by dogmatic theology, either means nothing, says our principle, or it implies certain definite things that we can feel and do at particular moments of our lives, things which we could not feel and should not do were no God present and were the business of the universe carried on by material atoms instead. So far as our conceptions of the Deity involve no

such experiences, so far they are meaningless and verbal – scholastic entities and abstractions, as the positivists say, and fit objects for their scorn. But so far as they do involve such definite experiences, God means something for us, and may be real.

Now if we look at the definitions of God made by dogmatic theology, we see immediately that some stand and some fall when treated by this test. God, for example, as any orthodox text-book will tell us, is a being existing not only *per se*, or by himself, as created beings exist, but *a se*, or from himself; and out of this "aseity" flow most of his perfections. He is, for example, necessary; absolute; infinite in all respects; and single. He is simple, not compounded of essence and existence, substance and accident, actuality and potentiality, or subject and attributes, as are other things. He belongs to no genus; he is inwardly and outwardly unalterable; he knows and wills all things, and first of all his own infinite self, in one indivisible eternal act. And he is absolutely self-sufficing, and infinitely happy. – Now in which one of us practical Americans here assembled does this conglomeration of attributes awaken any sense of reality? And if in no one, then why not? Surely because such attributes awaken no responsive active feelings and call for no particular conduct of our own. How does God's "aseity" come home to *you?* What specific thing can I do to adapt myself to his "simplicity"? Or how determine our behavior henceforward if his "felicity" is anyhow absolutely complete? In the '50's and '60's Captain Mayne Reid was the great writer of boys' books of out-of-door adventure. He was forever extolling the hunters and field-observers of living animals' habits, and keeping up a fire of invective against the "closet-naturalists," as he called them, the collectors and classifiers, and handlers of skeletons and skins. When I was a boy I used to think that a closet-naturalist must be the vilest type of wretch under the sun. But surely the systematic theologians are the closet-naturalists of the Deity, even in Captain Mayne Reid's sense. Their orthodox deduction of God's attributes is nothing but a shuffling and matching of pedantic dictionary-adjectives, aloof from morals, aloof from human needs, something that might be worked out from the mere word "God" by a logical machine of wood and brass as well as by a man of flesh and blood. The attributes which I have quoted have absolutely nothing to do with religion, for religion is a living practical affair. Other parts, indeed, of God's traditional description do have practical connection with life, and have owed all their historic importance to that fact. His omniscience, for example, and his justice. With the one he sees us in the dark, with the other he rewards and punishes what he sees. So do his ubiquity and eternity and unalterability appeal to our confidence, and his goodness banish our fears. Even attributes of less meaning to this present audience have in past times so appealed. One of the chief attributes of God, according to the orthodox theology, is his infinite love of himself, proved by asking the question, "By what but an infinite object can an infinite affection be appeased?" An

immediate consequence of this primary self-love of God is the orthodox dogma that the manifestation of his own glory is God's primal purpose in creation; and that dogma has certainly made very efficient practical connection with life. It is true that we ourselves are tending to outgrow this old monarchical conception of a Deity with his "court" and pomp – "his state is kingly, thousands at his bidding speed," etc. – but there is no denying the enormous influence it has had over ecclesiastical history, nor, by repercussion, over the history of European states. And yet even these more real and significant attributes have the trail of the serpent over them as the books on theology have actually worked them out. One feels that, in the theologians' hands, they are only a set of dictionary-adjectives, mechanically deduced; logic has stepped into the place of vision, professionalism into that of life. Instead of bread we get a stone; instead of a fish, a serpent. Did such a conglomeration of abstract general terms give really the gist of our knowledge of the Deity, divinity-schools might indeed continue to flourish, but religion, vital religion, would have taken its flight from this world. What keeps religion going is something else than abstract definitions and systems of logically concatenated adjectives, and something different from faculties of theology and their professors. All these things are after-effects, secondary accretions upon a mass of concrete religious experiences, connecting themselves with feeling and conduct that renew themselves *in saecula saeculorum* in the lives of humble private men. If you ask what these experiences are, they are conversations with the unseen, voices and visions, responses to prayer, changes of heart, deliverances from fear, inflowings of help, assurances of support, whenever certain persons set their own internal attitude in certain appropriate ways. The power comes and goes and is lost, and can be found only in a certain definite direction, just as if it were a concrete material thing. These direct experiences of a wider spiritual life, with which our superficial consciousness is continuous, and with which it keeps up an intense commerce, form the primary mass of direct religious experience on which all hearsay religion rests, and which furnishes that notion of an ever-present God, out of which systematic theology thereupon proceeds to make capital in its own unreal pedantic way. What the word "God" means is just those passive and active experiences of your life. Now, my friends, it is quite immaterial to my purpose whether yourselves enjoy and venerate these experiences, or whether you stand aloof and, viewing them in others, suspect them of being illusory and vain. Like all other human experiences, they too certainly share in the general liability to illusion and mistake. They need not be infallible. But they are certainly the originals of the God-idea, and theology is the translation; and you remember that I am now using the God-idea merely as an example, not to discuss as to its truth or error, but only to show how well the principle of pragmatism works. That the God of systematic theology should exist or not exist is a matter of small practical moment. At most it means that you may

continue uttering certain abstract words and that you must stop using others. But if the God of these particular experiences be false, it is an awful thing for you, if you are one of those whose lives are stayed on such experiences. The theistic controversy, trivial enough if we take it merely academically and theologically, is of tremendous significance if we test it by its results for actual life.

I can best continue to recommend the principle of practicalism to you by keeping in the neighborhood of this theological idea. I reminded you a few minutes ago that the old monarchical notion of the Deity as a sort of Louis the Fourteenth of the Heavens is losing nowadays much of its ancient prestige. Religious philosophy, like all philosophy, is growing more and more idealistic. And in the philosophy of the Absolute, so called, that post-Kantian form of idealism which is carrying so many of our higher minds before it, we have the triumph of what in old times was summarily disposed of as the pantheistic heresy – I mean the conception of God, not as the extraneous creator, but as the indwelling spirit and substance of the world. I know not where one can find a more candid, more clear, or, on the whole, more persuasive statement of this theology of Absolute Idealism than in the addresses made before this very Union three years ago by your own great Californian philosopher (whose colleague at Harvard I am proud to be), Josiah Royce. His contributions to the resulting volume, *The Conception of God*, form a very masterpiece of popularization. Now you will remember, many of you, that in the discussion that followed Professor Royce's first address, the debate turned largely on the ideas of unity and plurality, and on the question whether, if God be One in All and All in All, "One with the unity of a single instant," as Royce calls it, "forming in His wholeness one luminously transparent moment," any room is left for real morality or freedom. Professor Howison, in particular, was earnest in urging that morality and freedom are relations between a manifold of selves, and that under the régime of Royce's monistic Absolute Thought "no true manifold of selves is or can be provided for." I will not go into any of the details of that particular discussion, but just ask you to consider for a moment whether, in general, any discussion about monism or pluralism, any argument over the unity of the universe, would not necessarily be brought into a shape where it tends to straighten itself out, by bringing our principle of practical results to bear.

The question whether the world is at bottom One or Many is a typical metaphysical question. Long has it raged! In its crudest form it is an exquisite example of the *loggerheads* of metaphysics. "I say it is one great fact," Parmenides and Spinoza exclaim. "I say it is many little facts," reply the atomists and associationists. "I say it is both one and many, many in one," say the Hegelians; and in the ordinary popular discussions we rarely get beyond this barren reiteration by the disputants of their pet adjectives of number. But is it not first of all clear that when we take such an adjective as

"One" absolutely and abstractly, its meaning is so vague and empty that it makes no difference whether we affirm or deny it? Certainly this universe is not the mere number One; and yet you can number it "one," if you like, in talking about it as contrasted with other possible worlds numbered "two" and "three" for the occasion. What exact thing do you *practically* mean by "One," when you call the universe One, is the first question you must ask. In what ways does the oneness come home to your own personal life? By what difference does it express itself in your experience? How can you act differently towards a universe which is one? Inquired into in this way, the unity might grow clear and be affirmed in some ways and denied in others, and so cleared up, even though a certain vague and worshipful portentousness might disappear from the notion of it in the process.

For instance, one practical result that follows when we have one thing to handle, is that we can pass from one part of it to another without letting go of the thing. In this sense oneness must be partly denied and partly affirmed of our universe. Physically we can pass continuously in various manners from one part of it to another part. But logically and psychically the passage seems less easy, for there is no obvious transition from one mind to another, or from minds to physical things. You have to step off and get on again; so that in these ways the world is not one, as measured by that practical test.

Another practical meaning of oneness is susceptibility of collection. A collection is one, though the things that compose it be many. Now, can we practically "collect" the universe? Physically, of course we cannot. And mentally we cannot, if we take it concretely in its details. But if we take it summarily and abstractly, then we collect it mentally whenever we refer to it, even as I do now when I fling the term "universe" at it, and so seem to leave a mental ring around it. It is plain, however, that such abstract noetic unity (as one might call it) is practically an extremely insignificant thing.

Again, oneness may mean generic sameness, so that you can treat all parts of the collection by one rule and get the same results. It is evident that in this sense the oneness of our world is incomplete, for in spite of much generic sameness in its elements and items, they still remain of many irreducible kinds. You can't pass by mere logic all over the field of it.

Its elements have, however, an affinity or commensurability with each other, are not wholly irrelevant, but can be compared, and fit together after certain fashions. This again might practically mean that they were one *in origin*, and that, tracing them backwards, we should find them arising in a single primal causal fact. Such unity of origin would have definite practical consequences, would have them for our scientific life at least.

I can give only these hasty superficial indications of what I mean when I say that it tends to clear up the quarrel between monism and pluralism to subject the notion of unity to such practical tests. On the other hand, it does but perpetuate strife and misunderstanding to continue talking of it in an

absolute and mystical way. I have little doubt myself that this old quarrel might be completely smoothed out to the satisfaction of all claimants, if only the maxim of Peirce were methodically followed here. The current monism on the whole still keeps talking in too abstract a way. It says the world must be either pure disconnectedness, no universe at all, or absolute unity. It insists that there is no stopping-place half way. Any connection whatever, says this monism, is only possible if there be still more connection, until at last we are driven to admit the absolutely total connection required. But this absolutely total connection either means nothing, is the mere word "one" spelt long; or else it means the sum of all the partial connections that can possibly be conceived. I believe that when we thus attack the question, and set ourselves to search for these possible connections, and conceive each in a definite practical way, the dispute is already in a fair way to be settled beyond the chance of misunderstanding, by a compromise in which the Many and the One both get their lawful rights.

But I am in danger of becoming technical; so I must stop right here, and let you go.

I am happy to say that it is the English-speaking philosophers who first introduced the custom of interpreting the meaning of conceptions by asking what difference they make for life. Mr. Peirce has only expressed in the form of an explicit maxim what their sense for reality led them all instinctively to do. The great English way of investigating a conception is to ask yourself right off, "What is it *known as?* In what facts does it result? What is its *cash-value*, in terms of particular experience? and what special difference would come into the world according as it were true or false?" Thus does Locke treat the conception of personal identity. What you mean by it is just your chain of memories, says be. That is the only concretely verifiable part of its significance. All further ideas about it, such as the oneness or manyness of the spiritual substance on which it is based, are therefore void of intelligible meaning; and propositions touching such ideas may be indifferently affirmed or denied. So Berkeley with his "matter" The cash-value of matter is our physical sensations. That is what it is known as, all that we concretely verify of its conception. That therefore is the whole meaning of the word "matter" – any other pretended meaning is mere wind of words. Hume does the same thing with causation. It is known as habitual antecedence, and tendency on our part to look for something definite to come. Apart from this practical meaning it has no significance whatever, and books about it may be committed to the flames, says Hume. Stewart and Brown, James Mill, John Mill, and Bain, have followed more or less consistently the same method; and Shadworth Hodgson has used it almost as explicitly as Mr. Peirce. These writers have many of them no doubt been too sweeping in their negations; Hume, in particular, and James Mill, and Bain. But when all is said and done, it was they, not Kant, who introduced "the critical method" into philosophy,

the one method fitted to make philosophy a study worthy of serious men. For what seriousness can possibly remain in debating philosophic propositions that will never make an appreciable difference to us in action? And what matters it, when all propositions are practically meaningless, which of them be called true or false?

The shortcomings and the negations and baldnesses of the English philosophers in question come, not from their eye to merely practical results, but solely from their failure to track the practical results completely enough to see how far they extend. Hume can be corrected and built out, and his beliefs enriched, by using Humian principles exclusively, and without making any use of the circuitous and ponderous artificialities of Kant. It is indeed a some what pathetic matter, as it seems to me, that this is not the course which the actual history of philosophy has followed. Hume had no English successors of adequate ability to complete him and correct his negations; so it happened, as a matter of fact, that the building out of critical philosophy has mainly been left to thinkers who were under the influence of Kant. Even in England and this country it is with Kantian catch-words and categories that the fuller view of life is pursued, and in our universities it is the courses in transcendentalism that kindle the enthusiasm of the more ardent students, whilst the courses in English philosophy are committed to a secondary place. I cannot think that this is exactly as it should be. And I say this not out of jingoism, for jingoism has no place in philosophy; or out of excitement over the great Anglo-American alliance against the world, of which we nowadays hear so much – though heaven knows that to that alliance I wish a God-speed. I say it because I sincerely believe that the English spirit in philosophy is intellectually, as well as practically and morally, on the saner, sounder, and truer path. Kant's mind is the rarest and most intricate of all possible antique bric-a-brac museums, and connoisseurs and dilettanti will always wish to visit it and see the wondrous and racy contents. The temper of the dear old man about his work is perfectly delectable. And yet he is really – although I shrink with some terror from saying such a thing before some of you here present – at bottom a mere curio, a "specimen." I mean by this a perfectly definite thing: I believe that Kant bequeathes to us not one single conception which is both indispensable to philosophy and which philosophy either did not possess before him, or was not destined inevitably to acquire after him through the growth of men's reflection upon the hypothesis by which science interprets nature. The true line of philosophic progress lies, in short, it seems to me, not so much *through* Kant as *round* him to the point where now we stand. Philosophy can perfectly well outflank him, and build herself up into adequate fullness by prolonging more directly the older English lines.

May I hope, as I now conclude, and release your attention from the strain to which you have so kindly put it on my behalf, that on this wonderful

Pacific Coast, of which our race is taking possession, the principle of practicalism, in which I have tried so hard to interest you, and with it the whole English tradition in philosophy, will come to its rights, and in your hands help the rest of us in our struggle towards the light.

PRAGMATISM

William James, "Pragmatism." *Dictionary of Philosophy and Psychology*, ed. James Mark Baldwin (New York: Macmillan, 1902), vol. 2, pp. 321.

The doctrine that the whole 'meaning' of a conception expresses itself in practical consequences, consequences either in the shape of conduct to be recommended, or in that of experiences to be expected, if the conception be true; which consequences would be different were it untrue, and must be different from the consequences by which the meaning of other conceptions in is turn expressed. If a second conception should not appear to have other consequences, then it must really be only the first conception under a different name. In methodology it is certain that to trace and compare their respective consequences is an admirable way of establishing the different meanings of different conceptions.

WHAT PRAGMATISM MEANS

William James, "What Pragmatism Means." *Pragmatism: A New Name for Some Old Ways of Thinking* (New York: Longmans, Green and Co., 1907), chap. 2, pp. 43–81.

Some years ago, being with a camping party in the mountains, I returned from a solitary ramble to find everyone engaged in a ferocious metaphysical dispute. The *corpus* of the dispute was a squirrel – a live squirrel supposed to be clinging to one side of a tree-trunk; while over against the tree's opposite side a human being was imagined to stand. This human witness tries to get sight of the squirrel by moving rapidly round the tree, but no matter how fast he goes, the squirrel moves as fast in the opposite direction, and always keeps the tree between himself and the man, so that never a glimpse of him is caught. The resultant metaphysical problem now is this: *Does the man go round the squirrel or not?* He goes round the tree, sure enough, and the squirrel is on the tree; but does he go round the squirrel? In the unlimited leisure of the wilderness, discussion had been worn threadbare. Everyone had taken sides, and was obstinate; and the numbers on both sides were even. Each side, when I appeared, therefore appealed to me to make it a majority. Mindful of the scholastic adage that whenever you meet a contradiction you must make a distinction, I immediately sought and found one, as follows: "Which party is right," I said, "depends on what you *practically mean* by 'going round' the squirrel. If you mean passing from the north of him to the east, then to the south, then to the west, and then to the north of him again, obviously the man does go round him, for he occupies these successive positions. But if on the contrary you mean being first in front of him, then on the right of him, then behind him, then on his left, and finally in front again, it is quite as obvious that the man fails to go round him, for by the compensating movements the squirrel makes, he keeps his belly turned towards the man all the time, and his back turned away. Make the distinction, and there is no occasion for any farther dispute. You are both right and both wrong according as you conceive the verb 'to go round' in one practical fashion or the other."

Altho one or two of the hotter disputants called my speech a shuffling evasion, saying they wanted no quibbling or scholastic hair-splitting, but meant just plain honest English 'round', the majority seemed to think that the distinction had assuaged the dispute.

I tell this trivial anecdote because it is a peculiarly simple example of what I wish now to speak of as *the pragmatic method*. The pragmatic method is primarily a method of settling metaphysical disputes that otherwise might be interminable. Is the world one or many? – fated or free? – material or spiritual? – here are notions either of which may or may not hold good of the world; and disputes over such notions are unending. The pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it practically make to anyone if this notion rather than that notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle. Whenever a dispute is serious, we ought to be able to show some practical difference that must follow from one side or the other's being right.

A glance at the history of the idea will show you still better what pragmatism means. The term is derived from the same Greek word πράγμα, meaning action, from which our words 'practice' and 'practical' come. It was first introduced into philosophy by Mr. Charles Peirce in 1878. In an article entitled "How to Make Our Ideas Clear," in the *Popular Science Monthly* for January of that year[1] Mr. Peirce, after pointing out that our beliefs are really rules for action, said that, to develop a thought's meaning, we need only determine what conduct it is fitted to produce: that conduct is for us its sole significance. And the tangible fact at the root of all our thought-distinctions, however subtle, is that there is no one of them so fine as to consist in anything but a possible difference of practice. To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve – what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object, so far as that conception has positive significance at all.

This is the principle of Peirce, the principle of pragmatism. It lay entirely unnoticed by anyone for twenty years, until I, in an address before Professor Howison's philosophical union at the University of California, brought it forward again and made a special application of it to religion. By that date (1898) the times seemed ripe for its reception. The word 'pragmatism' spread, and at present it fairly spots the pages of the philosophic journals. On all hands we find the 'pragmatic movement' spoken of, sometimes with respect, sometimes with contumely, seldom with clear understanding. It is evident that the term applies itself conveniently to a number of tendencies that hitherto have lacked a collective name, and that it has 'come to stay'.

To take in the importance of Peirce's principle, one must get accustomed to applying it to concrete cases. I found a few years ago that Ostwald, the illus-

[1] Translated in the *Revue Philosophique* for January, 1879 (vol. vii).

trious Leipzig chemist, had been making perfectly distinct use of the principle of pragmatism in his lectures on the philosophy of science, tho he had not called it by that name.

"All realities influence our practice," he wrote me, "and that influence is their meaning for us. I am accustomed to put questions to my classes in this way: In what respects would the world be different if this alternative or that were true? If I can find nothing that would become different, then the alternative has no sense."

That is, the rival views mean practically the same thing, and meaning, other than practical, there is for us none. Ostwald in a published lecture gives this example of what he means. Chemists have long wrangled over the inner constitution of certain bodies called 'tautomerous'. Their properties seemed equally consistent with the notion that an instable hydrogen atom oscillates inside of them, or that they are instable mixtures of two bodies. Controversy raged; but never was decided. "It would never have begun," says Ostwald, "if the combatants had asked themselves what particular experimental fact could have been made different by one or the other view being correct. For it would then have appeared that no difference of fact could possibly ensue; and the quarrel was as unreal as if, theorizing in primitive times about the raising of dough by yeast, one party should have invoked a 'brownie', while another insisted on an 'elf' as the true cause of the phenomenon."[2]

It is astonishing to see how many philosophical disputes collapse into insignificance the moment you subject them to this simple test of tracing a concrete consequence. There can *be* no difference anywhere that doesn't *make* a difference elsewhere – no difference in abstract truth that doesn't express itself in a difference in concrete fact and in conduct consequent upon that fact, imposed on somebody, somehow, somewhere and somewhen. The whole function of philosophy ought to be to find out what definite difference it will make to you and me, at definite instants of our life, if this world-formula or that world-formula be the true one.

There is absolutely nothing new in the pragmatic method. Socrates was an adept at it. Aristotle used it methodically. Locke, Berkeley and Hume made momentous contributions to truth by its means. Shadworth Hodgson keeps insisting that realities are only what they are 'known-as'. But these forerunners of pragmatism used it in fragments: they were preluders only. Not until in our time has it generalized itself, become conscious of a universal mission,

[2] "Theorie und Praxis," *Zeitsch. des Oesterreichischen Ingenieur u. Architecten-Vereines*, 1905, Nr. 4 u. 6. I find a still more radical pragmatism than Ostwald's in an address by Professor W. S. Franklin: "I think that the sickliest notion of physics, even if a student gets it, is that it is 'the science of masses, molecules and the ether.' And I think that the healthiest notion, even if a student does not wholly get it, is that physics is the science of the ways of taking hold of bodies and pushing them!" (*Science*, January 2, 1903.)

pretended to a conquering destiny. I believe in that destiny, and I hope I may end by inspiring you with my belief.

Pragmatism represents a perfectly familiar attitude in philosophy, the empiricist attitude, but it represents it, as it seems to me, both in a more radical and in a less objectionable form than it has ever yet assumed. A pragmatist turns his back resolutely and once for all upon a lot of inveterate habits dear to professional philosophers. He turns away from abstraction and insufficiency, from verbal solutions, from bad *a priori* reasons, from fixed principles, closed systems, and pretended absolutes and origins. He turns towards concreteness and adequacy, towards facts, towards action, and towards power. That means the empiricist temper regnant, and the rationalist temper sincerely given up. It means the open air and possibilities of nature, as against dogma, artificiality and the pretence of finality in truth.

At the same time it does not stand for any special results. It is a method only. But the general triumph of that method would mean an enormous change in what I called in my last lecture the 'temperament' of philosophy. Teachers of the ultra-rationalistic type would be frozen out, much as the courtier type is frozen out in republics, as the ultramontane type of priest is frozen out in protestant lands. Science and metaphysics would come much nearer together, would in fact work absolutely hand in hand.

Metaphysics has usually followed a very primitive kind of quest. You know how men have always hankered after unlawful magic, and you know what a great part, in magic, *words* have always played. If you have his name, or the formula of incantation that binds him, you can control the spirit, genie, afrite, or whatever the power may be. Solomon knew the names of all the spirits, and having their names, he held them subject to his will. So the universe has always appeared to the natural mind as a kind of enigma, of which the key must be sought in the shape of some illuminating or power-bringing word or name. That word names the universe's *principle*, and to possess it is, after a fashion, to possess the universe itself. 'God', 'Matter', 'Reason', 'the Absolute', 'Energy', are so many solving names. You can rest when you have them. You are at the end of your metaphysical quest.

But if you follow the pragmatic method, you cannot look on any such word as closing your quest. You must bring out of each word its practical cash-value, set it at work within the stream of your experience. It appears less as a solution, then, than as a program for more work, and more particularly as an indication of the ways in which existing realities may be *changed*.

Theories thus become instruments, not answers to enigmas, in which we can rest. We don't lie back upon them, we move forward, and, on occasion, make nature over again by their aid. Pragmatism unstiffens all our theories, limbers them up and sets each one at work. Being nothing essentially new, it harmonizes with many ancient philosophic tendencies. It agrees with nominalism for instance, in always appealing to particulars; with utilitari-

anism in emphasizing practical aspects; with positivism in its disdain for verbal solutions, useless questions, and metaphysical abstractions.

All these, you see, are *anti-intellectualist* tendencies. Against rationalism as a pretension and a method, pragmatism is fully armed and militant. But, at the outset, at least, it stands for no particular results. It has no dogmas, and no doctrines save its method. As the young Italian pragmatist Papini has well said, it lies in the midst of our theories, like a corridor in a hotel. Innumerable chambers open out of it. In one you may find a man writing an atheistic volume; in the next someone on his knees praying for faith and strength; in a third a chemist investigating a body's properties. In a fourth a system of idealistic metaphysics is being excogitated; in a fifth the impossibility of metaphysics is being shown. But they all own the corridor, and all must pass through it if they want a practicable way of getting into or out of their respective rooms.

No particular results then, so far, but only an attitude of orientation, is what the pragmatic method means. The attitude of *looking away from first things, principles, 'categories', supposed necessities; and of looking towards last things, fruits, consequences, facts*.

So much for the pragmatic method! You may say that I have been praising it rather than explaining it to you, but I shall presently explain it abundantly enough by showing how it works on some familiar problems. Meanwhile the word pragmatism has come to be used in a still wider sense, as meaning also a certain *theory of truth*. I mean to give a whole lecture to the statement of that theory, after first paving the way, so I can be very brief now. But brevity is hard to follow, so I ask for your redoubled attention for a quarter of an hour. If much remains obscure, I hope to make it clearer in the later lectures.

One of the most successfully cultivated branches of philosophy in our time is what is called inductive logic, the study of the conditions under which our sciences have evolved. Writers on this subject have begun to show a singular unanimity as to what the laws of nature and elements of fact mean, when formulated by mathematicians, physicists and chemists. When the first mathematical, logical and natural uniformities, the first *laws*, were discovered, men were so carried away by the clearness, beauty and simplification that resulted, that they believed themselves to have deciphered authentically the eternal thoughts of the Almighty. His mind also thundered and reverberated in syllogisms. He also thought in conic sections, squares and roots and ratios, and geometrized like Euclid. He made Kepler's laws for the planets to follow; he made velocity increase proportionally to the time in falling bodies; he made the law of the sines for light to obey when refracted; he established the classes, orders, families and genera of plants and animals, and fixed the distances between them. He thought the archetypes of all things, and devised their variations; and when we rediscover any one of these his wondrous institutions, we seize his mind in its very literal intention.

But as the sciences have developed farther, the notion has gained ground that most, perhaps all, of our laws are only approximations. The laws themselves, moreover, have grown so numerous that there is no counting them; and so many rival formulations are proposed in all the branches of science that investigators have become accustomed to the notion that no theory is absolutely a transcript of reality, but that any one of them may from some point of view be useful. Their great use is to summarize old facts and to lead to new ones. They are only a man-made language, a conceptual shorthand, as someone calls them, in which we write our reports of nature; and languages, as is well known, tolerate much choice of expression and many dialects.

Thus human arbitrariness has driven divine necessity from scientific logic. If I mention the names of Sigwart, Mach, Ostwald, Pearson, Milhaud, Poincaré, Duhem, Ruyssen, those of you who are students will easily identify the tendency I speak of, and will think of additional names.

Riding now on the front of this wave of scientific logic Messrs. Schiller and Dewey appear with their pragmatistic account of what truth everywhere signifies. Everywhere, these teachers say, 'truth' in our ideas and beliefs means the same thing that it means in science. It means, they say, nothing but this, *that ideas (which themselves are but parts of our experience) become true just in so far as they help us to get into satisfactory relation with other parts of our experience*, to summarize them and get about among them by conceptual short-cuts instead of following the interminable succession of particular phenomena. Any idea upon which we can ride, so to speak; any idea that will carry us prosperously from any one part of our experience to any other part, linking things satisfactorily, working securely, simplifying, saving labor; is true for just so much, true in so far forth, true *instrumentally*. This is the 'instrumental' view of truth taught so successfully at Chicago, the view that truth in our ideas means their power to 'work', promulgated so brilliantly at Oxford.

Messrs. Dewey, Schiller and their allies, in reaching this general conception of all truth, have only followed the example of geologists, biologists and philologists. In the establishment of these other sciences, the successful stroke was always to take some simple process actually observable in operation – as denudation by weather, say, or variation from parental type, or change of dialect by incorporation of new words and pronunciations – and then to generalize it, making it apply to all times, and produce great results by summating its effects through the ages.

The observable process which Schiller and Dewey particularly singled out for generalization is the familiar one by which any individual settles into *new opinions*. The process here is always the same. The individual has a stock of old opinions already, but he meets a new experience that puts them to a strain. Somebody contradicts them; or in a reflective moment he discovers that they contradict each other; or he hears of facts with which they are incompatible;

or desires arise in him which they cease to satisfy. The result is an inward trouble to which his mind till then had been a stranger, and from which he seeks to escape by modifying his previous mass of opinions. He saves as much of it as he can, for in this matter of belief we are all extreme conservatives. So he tries to change first this opinion, and then that (for they resist change very variously), until at last some new idea comes up which he can graft upon the ancient stock with a minimum of disturbance of the latter, some idea that mediates between the stock and the new experience and runs them into one another most felicitously and expediently.

This new idea is then adopted as the true one. It preserves the older stock of truths with a minimum of modification, stretching them just enough to make them admit the novelty, but conceiving that in ways as familiar as the case leaves possible. An *outrée* explanation, violating all our preconceptions, would never pass for a true account of a novelty. We should scratch round industriously till we found something less excentric. The most violent revolutions in an individual's beliefs leave most of his old order standing. Time and space, cause and effect, nature and history, and one's own biography remain untouched. New truth is always a go-between, a smoother-over of transitions. It marries old opinion to new fact so as ever to show a minimum of jolt, a maximum of continuity. We hold a theory true just in proportion to its success in solving this 'problem of maxima and minima'. But success in solving this problem is eminently a matter of approximation. We say this theory solves it on the whole more satisfactorily than that theory; but that means more satisfactorily to ourselves, and individuals will emphasize their points of satisfaction differently. To a certain degree, therefore, everything here is plastic.

The point I now urge you to observe particularly is the part played by the older truths. Failure to take account of it is the source of much of the unjust criticism leveled against pragmatism. Their influence is absolutely controlling. Loyalty to them is the first principle – in most cases it is the only principle; for by far the most usual way of handling phenomena so novel that they would make for a serious rearrangement of our preconceptions is to ignore them altogether, or to abuse those who bear witness for them.

You doubtless wish examples of this process of truth's growth, and the only trouble is their superabundance. The simplest case of new truth is of course the mere numerical addition of new kinds of facts, or of new single facts of old kinds, to our experience – an addition that involves no alteration in the old beliefs. Day follows day, and its contents are simply added. The new contents themselves are not true, they simply *come* and *are*. Truth is *what we say about* them, and when we say that they have come, truth is satisfied by the plain additive formula.

But often the day's contents oblige a rearrangement. If I should now utter piercing shrieks and act like a maniac on this platform, it would make many

of you revise your ideas as to the probable worth of my philosophy. 'Radium' came the other day as part of the day's content, and seemed for a moment to contradict our ideas of the whole order of nature, that order having come to be identified with what is called the conservation of energy. The mere sight of radium paying heat away indefinitely out of its own pocket seemed to violate that conservation. What to think? If the radiations from it were nothing but an escape of unsuspected 'potential' energy, pre-existent inside of the atoms, the principle of conservation would be saved. The discovery of 'helium' as the radiation's outcome, opened a way to this belief So Ramsay's view is generally held to be true, because, altho it extends our old ideas of energy, it causes a minimum of alteration in their nature.

I need not multiply instances. A new opinion counts as 'true' just in proportion as it gratifies the individual's desire to assimilate the novel in his experience to his beliefs in stock. It must both lean on old truth and grasp new fact; and its success (as I said a moment ago) in doing this, is a matter for the individual's appreciation. When old truth grows, then, by new truth's addition, it is for subjective reasons. We are in the process and obey the reasons. That new idea is truest which performs most felicitously its function of satisfying our double urgency. It makes itself true, gets itself classed as true, by the way it works; grafting itself then upon the ancient body of truth, which thus grows much as a tree grows by the activity of a new layer of cambium.

Now Dewey and Schiller proceed to generalize this observation and to apply it to the most ancient parts of truth. They also once were plastic. They also were called true for human reasons. They also mediated between still earlier truths and what in those days were novel observations. Purely objective truth, truth in whose establishment the function of giving human satisfaction in marrying previous parts of experience with newer parts played no rôle whatever, is nowhere to be found. The reasons why we call things true is the reason why they *are* true, for 'to be true' *means* only to perform this marriage-function.

The trail of the human serpent is thus over everything. Truth independent; truth that we *find* merely; truth no longer malleable to human need; truth incorrigible, in a word; such truth exists indeed superabundantly – or is supposed to exist by rationalistically minded thinkers; but then it means only the dead heart of the living tree, and its being there means only that truth also has its paleontology and its 'prescription', and may grow stiff with years of veteran service and petrified in men's regard by sheer antiquity. But how plastic even the oldest truths nevertheless really are has been vividly shown in our day by the transformation of logical and mathematical ideas, a transformation which seems even to be invading physics. The ancient formulas are reinterpreted as special expressions of much wider principles, principles that our ancestors never got a glimpse of in their present shape and formulation.

Mr. Schiller still gives to all this view of truth the name of 'Humanism', but, for this doctrine too, the name of pragmatism seems fairly to be in the ascendant, so I will treat it under the name of pragmatism in these lectures.

Such then would be the scope of pragmatism – first, a method; and second, a genetic theory of what is meant by truth. And these two things must be our future topics.

What I have said of the theory of truth will, I am sure, have appeared obscure and unsatisfactory to most of you by reason of its brevity. I shall make amends for that hereafter. In a lecture on 'common sense' I shall try to show what I mean by truths grown petrified by antiquity. In another lecture I shall expatiate on the idea that our thoughts become true in proportion as they successfully exert their go-between function. In a third I shall show how hard it is to discriminate subjective from objective factors in Truth's development. You may not follow me wholly in these lectures; and if you do, you may not wholly agree with me. But you will, I know, regard me at least as serious, and treat my effort with respectful consideration.

You will probably be surprised to learn, then, that Messrs. Schiller's and Dewey's theories have suffered a hailstorm of contempt and ridicule. All rationalism has risen against them. In influential quarters Mr. Schiller, in particular, has been treated like an impudent schoolboy who deserves a spanking. I should not mention this, but for the fact that it throws so much sidelight upon that rationalistic temper to which I have opposed the temper of pragmatism. Pragmatism is uncomfortable away from facts. Rationalism is comfortable only in the presence of abstractions. This pragmatist talk about truths in the plural, about their utility and satisfactoriness, about the success with which they 'work', etc., suggests to the typical intellectualist mind a sort of coarse lame second-rate makeshift article of truth, Such truths are not real truth. Such tests are merely subjective. As against this, objective truth must be something non-utilitarian, haughty, refined, remote, august, exalted. It must be an absolute correspondence of our thoughts with an equally absolute reality. It must be what we *ought* to think, unconditionally. The conditioned ways in which we *do* think are so much irrelevance and matter for psychology. Down with psychology, up with logic, in all this question!

See the exquisite contrast of the types of mind! The pragmatist clings to facts and concreteness, observes truth at its work in particular cases, and generalizes. Truth, for him, becomes a class-name for all sorts of definite working-values in experience. For the rationalist it remains a pure abstraction, to the bare name of which we must defer. When the pragmatist undertakes to show in detail just *why* we must defer, the rationalist is unable to recognize the concretes from which his own abstraction is taken. He accuses us of *denying* truth; whereas we have only sought to trace exactly why people follow it and always ought to follow it. Your typical ultra-abstractionist fairly shudders at concreteness: other things equal, he positively prefers the pale and spectral.

If the two universes were offered, he would always choose the skinny outline rather than the rich thicket of reality. It is so much purer, clearer, nobler.

I hope that as these lectures go on, the concreteness and closeness to facts of the pragmatism which they advocate may be what approves itself to you as its most satisfactory peculiarity. It only follows here the example of the sister-sciences, interpreting the unobserved by the observed. It brings old and new harmoniously together. It converts the absolutely empty notion of a static relation of 'correspondence' (what that may mean we must ask later) between our minds and reality, into that of a rich and active commerce (that anyone may follow in detail and understand) between particular thoughts of ours, and the great universe of other experiences in which they play their parts and have their uses.

But enough of this at present? The justification of what I say must be postponed. I wish now to add a word in further explanation of the claim I made at out last meeting, that pragmatism may be a happy harmonizer of empiricist ways of thinking, with the more religious demands of human beings.

Men who are strongly of the fact-loving temperament, you may remember me to have said, are liable to be kept at a distance by the small sympathy with facts which that philosophy from the present-day fashion of idealism offers them. It is far too intellectualistic. Old fashioned theism was bad enough, with its notion of God as an exalted monarch, made up of a lot of unintelligible or preposterous 'attributes'; but, so long as it held strongly by the argument from design, it kept some touch with concrete realities. Since, however, darwinism has once for all displaced design from the minds of the 'scientific', theism has lost that foothold; and some kind of an immanent or pantheistic deity working *in* things rather than above them is, if any, the kind recommended to our contemporary imagination. Aspirants to a philosophic religion turn, as a rule, more hopefully nowadays towards idealistic pantheism than towards the older dualistic theism, in spite of the fact that the latter still counts able defenders.

But, as I said in my first lecture, the brand of pantheism offered is hard for them to assimilate if they are lovers of facts, or empirically minded. It is the absolutistic brand, spurning the dust and reared upon pure logic. It keeps no connexion whatever with concreteness. Affirming the Absolute Mind, which is its substitute for God, to be the rational presupposition of all particulars of fact, whatever they may be, it remains supremely indifferent to what the particular facts in our world actually are. Be they what they may, the Absolute will father them. Like the sick lion in Esop's fable, all footprints lead into his den, but *nulla vestigia retrorsum.* You cannot redescend into the world of particulars by the Absolute's aid, or deduce any necessary consequences of detail important for your life from your idea of his nature. He gives you indeed the assurance that all is well with *Him,* and for his eternal way of thinking;

but thereupon he leaves you to be finitely saved by your own temporal devices.

Far be it from me to deny the majesty of this conception, or its capacity to yield religious comfort to a most respectable class of minds. But from the human point of view, no one can pretend that it doesn't suffer from the faults of remoteness and abstractness. It is eminently a product of what I have ventured to call the rationalistic temper. It disdains empiricism's needs. It substitutes a pallid outline for the real world's richness. It is dapper; it is noble in the bad sense, in the sense in which to be noble is to be inapt for humble service. In this real world of sweat and dirt, it seems to me that when a view of things is 'noble', that ought to count as a presumption against its truth, and as a philosophic disqualification. The prince of darkness may be a gentleman, as we are told he is, but whatever the God of earth and heaven is, he can surely be no gentleman. His menial services are needed in the dust of our human trials, even more than his dignity is needed in the empyrean.

Now pragmatism, devoted tho she be to facts, has no such materialistic bias as ordinary empiricism labors under. Moreover, she has no objection whatever to the realizing of abstractions, so long as you get about among particulars with their aid and they actually carry you somewhere. Interested in no conclusions but those which our minds and our experiences work out together, she has no *a priori* prejudices against theology. *If theological ideas prove to have a value for concrete life, they will be true, for pragmatism, in the sense of being good for so much. For how much more they are true, will depend entirely on their relations to the other truths that also have to be acknowledged.*

What I said just now about the Absolute of transcendental idealism is a case in point. First, I called it majestic and said it yielded religious comfort to a class of minds, and then I accused it of remoteness and sterility. But so far as it affords such comfort, it surely is not sterile; it has that amount of value; it performs a concrete function. As a good pragmatist, I myself ought to call the Absolute true 'in so far forth', then; and I unhesitatingly now do so.

But what does true *in so far forth* mean in this case? To answer, we need only apply the pragmatic method. What do believers in the Absolute mean by saying that their belief affords them comfort? They mean that since in the Absolute finite evil is 'overruled' already, we may, therefore, whenever we wish, treat the temporal as if it were potentially the eternal, be sure that we can trust its outcome, and, without sin, dismiss our fear and drop the worry of our finite responsibility. In short, they mean that we have a right ever and anon to take a moral holiday, to let the world wag in its own way, feeling that its issues are in better hands than ours and are none of our business.

The universe is a system of which the individual members may relax their anxieties occasionally, in which the don't-care mood is also right for men, and moral holidays in order – that, if I mistake not, is part, at least, of what the

Absolute is 'known-as', that is the great difference in our particular experiences which his being true makes for us, that is part of his cash-value when he is pragmatically interpreted. Farther than that the ordinary lay-reader in philosophy who thinks favorably of absolute idealism does not venture to sharpen his conceptions. He can use the Absolute for so much, and so much is very precious. He is pained at hearing you speak incredulously of the Absolute, therefore, and disregards your criticisms because they deal with aspects of the conception that he fails to follow.

If the Absolute means this, and means no more than this, who can possibly deny the truth of it? To deny it would be to insist that men should never relax, and that holidays are never in order.

I am well aware how odd it must seem to some of you to hear me say that an idea is 'true' so long as to believe it is profitable to our lives. That it is *good*, for as much as it profits, you will gladly admit. If what we do by its aid is good, you will allow the idea itself to be good in so far forth, for we are the better for possessing it. But is it not a strange misuse of the word 'truth', you will say, to call ideas also 'true' for this reason?

To answer this difficulty fully is impossible at this stage of my account. You touch here upon the very central point of Messrs. Schiller's, Dewey's and my own doctrine of truth, which I cannot discuss with detail until my sixth lecture. Let me now say only this, that truth is *one species of good*, and not, as is usually supposed, a category distinct from good, and co-ordinate with it. *The true is the name of whatever proves itself to be good in the way of belief and good, too, for definite, assignable reasons.* Surely you must admit this, that if there were *no* good for life in true ideas, or if the knowledge of them were positively disadvantageous and false ideas the only useful ones, then the current notion that truth is divine and precious, and its pursuit a duty, could never have grown up or become a dogma. In a world like that, our duty would be to *shun* truth, rather. But in this world, just as certain foods are not only agreeable to our taste, but good for our teeth, our stomach and our tissues; so certain ideas are not only agreeable to think about, or agreeable as supporting other ideas that we are fond of, but they are also helpful in life's practical struggles. If there be any life that it is really better we should lead, and if there be any idea which, if believed in, would help us to lead that life, then it would be really *better for us* to believe in that idea, *unless, indeed, belief in it incidentally clashed with other greater vital benefits.*

'What would be better for us to believe'! This sounds very like a definition of truth. It comes very near to saying 'what we *ought* to believe'; and in *that* definition none of you would find any oddity. Ought we ever not to believe what it is *better for us* to believe? And can we then keep the notion of what is better for us, and what is true for us, permanently apart?

Pragmatism says no, and I fully agree with her. Probably you also agree, so far as the abstract statement goes, but with a suspicion that if we practi-

cally did believe everything that made for good in our own personal lives, we should be found indulging all kinds of fancies about this world's affairs, and all kinds of sentimental superstitions about a world hereafter. Your suspicion here is undoubtedly well founded, and it is evident that something happens when you pass from the abstract to the concrete, that complicates the situation.

I said just now that what is better for us to believe is true *unless the belief incidentally clashes with some other vital benefit.* Now in real life what vital benefits is any particular belief of ours most liable to clash with? What indeed except the vital benefits yielded by *other beliefs* when these prove incompatible with the first ones? In other words, the greatest enemy of any one of our truths may be the rest of our truths. Truths have once for all this desperate instinct of self-preservation and of desire to extinguish whatever contradicts them. My belief in the Absolute, based on the good it does me, must run the gauntlet of all my other beliefs. Grant that it may be true in giving me a moral holiday. Nevertheless, as I conceive it – and let me speak now confidentially, as it were, and merely in my own private person – it clashes with other truths of mine whose benefits I hate to give up on its account. It happens to be associated with a kind of logic of which I am the enemy, I find that it entangles me in metaphysical paradoxes that are inacceptable, etc., etc. But as I have enough trouble in life already without adding the trouble of carrying these intellectual inconsistencies, I personally just give up the Absolute. I just *take* my moral holidays; or else as a professional philosopher, I try to justify them by some other principle.

If I could restrict my notion of the Absolute to its bare holiday-giving value, it wouldn't clash with my other truths. But we can not easily thus restrict our hypotheses. They carry supernumerary features, and these it is that clash so. My disbelief in the Absolute means then disbelief in those other supernumerary features, for I fully believe in the legitimacy of taking moral holidays.

You see by this what I meant when I called pragmatism a mediator and reconciler and said, borrowing the word from Papini, that she 'unstiffens' our theories. She has in fact no prejudices whatever, no obstructive dogmas, no rigid canons of what shall count as proof. She is completely genial. She will entertain any hypothesis, she will consider any evidence. It follows that in the religious field she is at a great advantage both over positivistic empiricism, with its anti-theological bias, and over religious rationalism, with its exclusive interest in the remote, the noble, the simple, and the abstract in the way of conception.

In short, she widens the field of search for God. Rationalism sticks to logic and the empyrean. Empiricism sticks to the external senses. Pragmatism is willing to take anything, to follow either logic or the senses, and to count the humblest and most personal experiences. She will count mystical experi-

ences if they have practical consequences. She will take a God who lives in the very dirt of private fact – if that should seem a likely place to find him.

Her only test of probable truth is what works best in the way of leading us, what fits every part of life best and combines with the collectivity of experience's demands, nothing being omitted. If theological ideas should do this, if the notion of God, in particular, should prove to do it, how could pragmatism possibly deny God's existence? She could see no meaning in treating as 'not true' a notion that was pragmatically so successful. What other kind of truth could there be, for her, than all this agreement with concrete reality?

In my last lecture I shall return again to the relations of pragmatism with religion. But you see already how democratic she is. Her manners are as various and flexible, her resources as rich and endless, and her conclusions as friendly as those of mother nature.

PRAGMATISM'S CONCEPTION OF TRUTH

William James, "Pragmatism's Conception of Truth." *Pragmatism: A New Name for Some Old Ways of Thinking* (New York: Longmans, Green and Co., 1907), chap. 6, pp. 197–236.

When Clerk Maxwell was a child it is written that he had a mania for having everything explained to him, and that when people put him off with vague verbal accounts of any phenomenon he would interrupt them impatiently by saying, "Yes; but I want you to tell me the *particular go* of it!" Had his question been about truth, only a pragmatist could have told him the particular go of it. I believe that our contemporary pragmatists, especially Messrs. Schiller and Dewey, have given the only tenable account of this subject. It is a very ticklish subject, sending subtle rootlets into all kinds of crannies, and hard to treat in the sketchy way that alone befits a public lecture. But the Schiller-Dewey view of truth has been so ferociously attacked by rationalistic philosophers, and so abominably misunderstood, that here, if anywhere, is the point where a clear and simple statement should be made.

I fully expect to see the pragmatist view of truth run through the classic stages of a theory's career. First, you know, a new theory is attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally it is seen to be so important that its adversaries claim that they themselves discovered it. Our doctrine of truth is at present in the first of these three stages, with symptoms of the second stage having begun in certain quarters. I wish that this lecture might help it beyond the first stage in the eyes of many of you.

Truth, as any dictionary will tell you, is a property of certain of our ideas. It means their 'agreement', as falsity means their disagreement, with 'reality'. Pragmatists and intellectualists both accept this definition as a matter of course. They begin to quarrel only after the question is raised as to what may precisely be meant by the term 'agreement', and what by the term 'reality', when reality is taken as something for our ideas to agree with.

In answering these questions the pragmatists are more analytic and painstaking, the intellectualists more offhand and irreflective. The popular notion is that a true idea must copy its reality. Like other popular views, this one follows the analogy of the most usual experience. Our true ideas of sensible things do indeed copy them. Shut your eyes and think of yonder clock on the wall, and you get just such a true picture or copy of its dial. But your

idea of its 'works' (unless you are a clock-maker) is much less of a copy, yet it passes muster, for it in no way clashes with the reality. Even tho it should shrink to the mere word 'works', that word still serves you truly; and when you speak of the 'time-keeping function' of the clock, or of its spring's 'elasticity', it is hard to see exactly what your ideas can copy.

You perceive that there is a problem here. Where our ideas cannot copy definitely their object, what does agreement with that object mean? Some idealists seem to say that they are true whenever they are what God means that we ought to think about that object. Others hold the copy-view all through, and speak as if our ideas possessed truth just in proportion as they approach to being copies of the Absolute's eternal way of thinking.

These views, you see, invite pragmatistic discussion. But the great assumption of the intellectualists is that truth means essentially an inert static relation. When you've got your true idea of anything, there's an end of the matter. You're in possession; you *know*; you have fulfilled your thinking destiny. You are where you ought to be mentally; you have obeyed your categorical imperative; and nothing more need follow on that climax of your rational destiny. Epistemologically you are in stable equilibrium.

Pragmatism, on the other hand, asks its usual question. "Grant an idea or belief to be true," it says, "what concrete difference will its being true make in anyone's actual life? How will the truth be realized? What experiences will be different from those which would obtain if the belief were false? What, in short, is the truth's cash-value in experiential terms?"

The moment pragmatism asks this question, it sees the answer: *True ideas are those that we can assimilate, validate, corroborate and verify. False ideas are those that we cannot*. That is the practical difference it makes to us to have true ideas; that, therefore, is the meaning of truth, for it is all that truth is known-as.

This thesis is what I have to defend. The truth of an idea is not a stagnant property inherent in it. Truth *happens* to an idea. It *becomes* true, is *made* true by events. Its verity *is* in fact an event, a process: the process namely of its verifying itself, its veri-*fication*. Its validity is the process of its valid-*ation*.

But what do the words verification and validation themselves pragmatically mean? They again signify certain practical consequences of the verified and validated idea. It is hard to find any one phrase that characterizes these consequences better than the ordinary agreement formula – just such consequences being what we have in mind whenever we say that our ideas 'agree' with reality. They lead us, namely, through the acts and other ideas which they instigate, into or up to, or towards, other parts of experience with which we feel all the while such feeling being among our potentialities – that the original ideas remain in agreement. The connexions and transitions come to us from point to point as being progressive, harmonious, satisfactory. This function of agreeable leading is what we mean by an idea's verification. Such an

account is vague and it sounds at first quite trivial, but it has results which it will take the rest of my hour to explain.

Let me begin by reminding you of the fact that the possession of true thoughts means everywhere the possession of invaluable instruments of action; and that our duty to gain truth, so far from being a blank command from out of the blue, or a 'stunt' self-imposed by our intellect, can account for itself by excellent practical reasons.

The importance to human life of having true beliefs about matters of fact is a thing too notorious. We live in a world of realities that can be infinitely useful or infinitely harmful. Ideas that tell us which of them to expect count as the true ideas in all this primary sphere of verification, and the pursuit of such ideas is a primary human duty. The possession of truth, so far from being here an end in itself, is only a preliminary means towards other vital satisfactions. If I am lost in the woods and starved, and find what looks like a cow-path, it is of the utmost importance that I should think of a human habitation at the end of it, for if I do so and follow it, I save myself. The true thought is useful here because the house which is its object is useful. The practical value of true ideas is thus primarily derived from the practical importance of their objects to us. Their objects are, indeed, not important at all times. I may on another occasion have no use for the house; and then my idea of it, however verifiable, will be practically irrelevant, and had better remain latent. Yet since almost any object may some day become temporarily important, the advantage of having a general stock of *extra* truths, of ideas that shall be true of merely possible situations, is obvious. We store such extra truths away in our memories, and with the overflow we fill our books of reference. Whenever such an extra truth becomes practically relevant to one of our emergencies, it passes from cold-storage to do work in the world, and our belief in it grows active. You can say of it then either that 'it is useful because it is true' or that 'it is true because it is useful'. Both these phrases mean exactly the same thing, namely that here is an idea that gets fulfilled and can be verified. True is the name for whatever idea starts the verification-process, useful is the name for its completed function in experience. True ideas would never have been singled out as such, would never have acquired a class-name, least of all a name suggesting value, unless they had been useful from the outset in this way.

From this simple cue pragmatism gets her general notion of truth as something essentially bound up with the way in which one moment in our experience may lead us towards other moments which it will be worth while to have been led to. Primarily, and on the common-sense level, the truth of a state of mind means this function of *a leading that is worth while*. When a moment in our experience, of any kind whatever, inspires us with a thought that is true, that means that sooner or later we dip by that thought's guidance into the particulars of experience again and make advantageous connexion

with them. This is a vague enough statement, but I beg you to retain it, for it is essential.

Our experience meanwhile is all shot through with regularities. One bit of it can warn us to get ready for another bit, can 'intend' or 'be significant of' that remoter object. The object's advent is the significance's verification. Truth, in these cases, meaning nothing but eventual verification, is manifestly incompatible with waywardness on our part. Woe to him whose beliefs play fast and loose with the order which realities follow in his experience: they will lead him nowhere or else make false connexions.

By 'realities' or 'objects' here, we mean either things of common sense, sensibly present, or else common-sense relations, such as dates, places, distances, kinds, activities. Following our mental image of a house along the cow-path, we actually come to see the house; we get the image's full verification. *Such simply and fully verified leadings are certainly the originals and prototypes of the truth-process.* Experience offers indeed other forms of truth-process, but they are all conceivable as being primary verifications arrested, multiplied or substituted one for another.

Take, for instance, yonder object on the wall. You and I consider it to be a 'clock', altho no one of us has seen the hidden works that make it one. We let our notion pass for true without attempting to verify. If truths mean verification-process essentially, ought we then to call such unverified truths as this abortive? No, for they form the overwhelmingly large number of the truths we live by. Indirect as well as direct verifications pass muster. Where circumstantial evidence is sufficient, we can go without eye-witnessing. Just as we here assume Japan to exist without ever having been there, because it *works* to do so, everything we know conspiring with the belief, and nothing interfering, so we assume that thing to be a clock. We *use* it as a clock, regulating the length of our lecture by it. The verification of the assumption here means its leading to no frustration or contradiction. Verifi*ability* of wheels and weights and pendulum is as good as verification. For one truth-process completed there are a million in our lives that function in this state of nascency. They turn us *towards* direct verification; lead us into the *surroundings* of the objects they envisage; and then, if everything runs on harmoniously, we are so sure that verification is possible that we omit it, and are usually justified by all that happens.

Truth lives, in fact, for the most part on a credit system. Our thoughts and beliefs 'pass', so long as nothing challenges them, just as bank-notes pass so long as nobody refuses them. But this all points to direct face-to-face verifications somewhere, without which the fabric of truth collapses like a financial system with no cash-basis whatever. You accept my verification of one thing, I yours of another. We trade on each other's truth. But beliefs verified concretely by *somebody* are the posts of the whole superstructure.

Another great reason – beside economy of time – for waiving complete

verification in the usual business of life is that all things exist in kinds and not singly. Our world is found once for all to have that peculiarity. So that when we have once directly verified our ideas about one specimen of a kind, we consider ourselves free to apply them to other specimens without verification. A mind that habitually discerns the kind of thing before it, and acts by the law of the kind immediately, without pausing to verify, will be a 'true' mind in ninety-nine out of a hundred emergencies, proved so by its conduct fitting everything it meets, and getting no refutation.

Indirectly or only potentially verifying processes may thus be true as well as full verification-processes. They work as true processes would work, give us the same advantages, and claim our recognition for the same reasons. All this on the common-sense level of matters of fact, which we are alone considering.

But matters of fact are not our only stock in trade. *Relations among purely mental ideas* form another sphere where true and false beliefs obtain, and here the beliefs are absolute, or unconditional. When they are true they bear the name either of definitions or of principles. It is either a principle or a definition that 1 and 1 make 2, that 2 and 1 make 3, and so on; that white differs less from gray than it does from black; that when the cause begins to act the effect also commences. Such propositions hold of all possible 'ones', of all conceivable 'whites' and 'grays' and 'causes'. The objects here are mental objects. Their relations are perceptually obvious at a glance, and no sense-verification is necessary. Moreover, once true, always true, of those same mental objects. Truth here has an 'eternal' character. If you can find a concrete thing anywhere that is 'one' or 'white' or 'gray', or an 'effect', then your principles will everlastingly apply to it. It is but a case of ascertaining the kind, and then applying the law of its kind to the particular object. You are sure to get truth if you can but name the kind rightly, for your mental relations hold good of everything of that kind without exception. If you then, nevertheless, failed to get truth concretely, you would say that you had classed your real objects wrongly.

In this realm of mental relations, truth again is an affair of leading. We relate one abstract idea with another, framing in the end great systems of logical and mathematical truth, under the respective terms of which the sensible facts of experience eventually arrange themselves, so that our eternal truths hold good of realities also. This marriage of fact and theory is endlessly fertile. What we say is here already true in advance of special verification, *if we have subsumed our objects rightly*. Our ready-made ideal framework for all sorts of possible objects follows from the very structure of our thinking. We can no more play fast and loose with these abstract relations than we can do so with our sense-experiences. They coerce us; we must treat them consistently, whether or not we like the results. The rules of addition apply to our debts as rigorously as to our assets. The hundredth decimal of π, the ratio of the

circumference to its diameter, is predetermined ideally now, tho no one may have computed it. If we should ever need the figure in our dealings with an actual circle we should need to have it given rightly, calculated by the usual rules; for it is the same kind of truth that those rules elsewhere calculate.

Between the coercions of the sensible order and those of the ideal order, our mind is thus wedged tightly. Our ideas must agree with realities, be such realities concrete or abstract, be they facts or be they principles, under penalty of endless inconsistency and frustration.

So far, intellectualists can raise no protest. They can only say that we have barely touched the skin of the matter.

Realities mean, then, either concrete facts, or abstract kinds of things and relations perceived intuitively between them. They furthermore and thirdly mean, as things that new ideas of ours must no less take account of, the whole body of other truths already in our possession. But what now does 'agreement' with such threefold realities mean? – to use again the definition that is current.

Here it is that pragmatism and intellectualism begin to part company. Primarily, no doubt, to agree means to copy, but we saw that the mere word 'clock' would do instead of a mental picture of its works, and that of many realities our ideas can only be symbols and not copies. 'Past time', 'power', 'spontaneity'– how can our mind copy such realities?

To 'agree' in the widest sense with a reality, *can only mean to be guided either straight up to it or into its surroundings, or to be put into such working touch with it as to handle either it or something connected with it better than if we disagreed*. Better either intellectually or practically! And often agreement will only mean the negative fact that nothing contradictory from the quarter of that reality comes to interfere with the way in which our ideas guide us elsewhere. To copy a reality is, indeed, one very important way of agreeing with it, but it is far from being essential. The essential thing is the process of being guided. Any idea that helps us to *deal*, whether practically or intellectually, with either the reality or its belongings, that doesn't entangle our progress in frustrations, that *fits*, in fact, and adapts our life to the reality's whole setting, will agree sufficiently to meet the requirement. It will hold true of that reality.

Thus, *names* are just as 'true' or 'false' as definite mental pictures are. They set up similar verification-processes, and lead to fully equivalent practical results.

All human thinking gets discursified; we exchange ideas; we lend and borrow verifications, get them from one another by means of social intercourse. All truth thus gets verbally built out, stored up, and made available for everyone. Hence, we must *talk* consistently just as we must *think* consistently: for both in talk and thought we deal with kinds. Names are arbitrary, but once understood they must be kept to. We mustn't now call Abel 'Cain'

or Cain 'Abel'. If we do, we ungear ourselves from the whole book of Genesis, and from all its connexions with the universe of speech and fact down to the present time. We throw ourselves out of whatever truth that entire system of speech and fact may embody.

The overwhelming majority of our true ideas admit of no direct or face-to-face verification – those of past history, for example, as of Cain and Abel. The stream of time can be remounted only verbally, or verified indirectly by the present prolongations or effects of what the past harbored. Yet if they agree with these verbalities and effects, we can know that our ideas of the past are true. *As true as past time itself was*, so true was Julius Caesar, so true were antediluvian monsters, all in their proper dates and settings. That past time itself was, is guaranteed by its coherence with everything that's present. True as the present *is*, the past *was* also.

Agreement thus turns out to be essentially an affair of leading – leading that is useful because it is into quarters that contain objects that are important. True ideas lead us into useful verbal and conceptual quarters as well as directly up to useful sensible termini. They lead to consistency, stability and flowing human intercourse. They lead away from excentricity and isolation, from foiled and barren thinking. The untrammeled flowing of the leading-process, its general freedom from clash and contradiction, passes for its indirect verification; but all roads lead to Rome, and in the end and eventually, all true processes must lead to the face of directly verifying sensible experiences *somewhere*, which somebody's ideas have copied.

Such is the large loose way in which the pragmatist interprets the word agreement. He treats it altogether practically. He lets it cover any process of conduction from a present idea to a future terminus, provided only it run prosperously. It is only thus that 'scientific' ideas, flying as they do beyond common sense, can be said to agree with their realities. It is, as I have already said, *as if* reality were made of ether, atoms or electrons, but we mustn't think so literally. The term 'energy' doesn't even pretend to stand for anything 'objective'. It is only a way of measuring the surface of phenomena so as to string their changes on a simple formula.

Yet in the choice of these man-made formulas we cannot be capricious with impunity any more than we can be capricious on the common-sense practical level. We must find a theory that will *work*; and that means something extremely difficult; for our theory must mediate between all previous truths and certain new experiences. It must derange common sense and previous belief as little as possible, and it must lead to some sensible terminus or other that can be verified exactly. To 'work' means both these things; and the squeeze is so tight that there is little loose play for any hypothesis. Our theories are wedged and controlled as nothing else is. Yet sometimes alternative theoretic formulas are equally compatible with all the truths we know, and then we choose between them for subjective reasons. We choose the kind

of theory to which we are already partial; we follow 'elegance' or 'economy'. Clerk Maxwell somewhere says it would be "poor scientific taste" to choose the more complicated of two equally well-evidenced conceptions; and you will all agree with him. Truth in science is what gives us the maximum possible sum of satisfactions, taste included, but consistency both with previous truth and with novel fact is always the most imperious claimant.

I have led you through a very sandy desert. But now, if I may be allowed so vulgar an expression, we begin to taste the milk in the cocoanut. Our rationalist critics here discharge their batteries upon us, and to reply to them will take us out from all this dryness into full sight of a momentous philosophical alternative.

Our account of truth is an account of truths in the plural, of processes of leading, realized in *rebus*, and having only this quality in common, that they *pay*. They pay by guiding us into or towards some part of a system that dips at numerous points into sense-percepts, which we may copy mentally or not, but with which at any rate we are now in the kind of commerce vaguely designated as verification. Truth for us is simply a collective name for verification-processes, just as health, wealth, strength, etc., are names for other processes connected with life, and also pursued because it pays to pursue them. Truth is *made*, just as health, wealth and strength are made, in the course of experience.

Here rationalism is instantaneously up in arms against us. I can imagine a rationalist to talk as follows:

"Truth is not made," he will say; "it absolutely obtains, being a unique relation that does not wait upon any process, but shoots straight over the head of experience, and hits its reality every time. Our belief that yon thing on the wall is a clock is true already, altho no one in the whole history of the world should verify it. The bare quality of standing in that transcendent relation is what makes any thought true that possesses it, whether or not there be verification. You pragmatists put the cart before the horse in making truth's being reside in verification-processes. These are merely signs of its being, merely our lame ways of ascertaining after the fact, which of our ideas already has possessed the wondrous quality. The quality itself is timeless, like all essences and natures. Thoughts partake of it directly, as they partake of falsity or of irrelevancy. It can't be analyzed away into pragmatic consequences."

The whole plausibility of this rationalist tirade is due to the fact to which we have already paid so much attention. In our world, namely abounding as it does in things of similar kinds and similarly associated, one verification serves for others of its kind, and one great use of knowing things is to be led not so much to them as to their associates, especially to human talk about them. The quality of truth, obtaining *ante rem*, pragmatically means, then, the fact that in such a world innumerable ideas work better by their indirect or possible than by their direct and actual verification. Truth *ante rem* means

only verifiability, then; or else it is a case of the stock rationalist trick of treating the *name* of a concrete phenomenal reality as an independent prior entity, and placing it behind the reality as its explanation. Professor Mach quotes somewhere an epigram of Lessing's:

> Sagt Hänschen Schlau zu Vetter Fritz,
> "Wie kommt es, Vetter Fritzen,
> Dass grad' die Reichsten in der Welt,
> Das meiste Geld besitzen?"

Hänschen Schlau here treats the principle 'wealth' as something distinct from the facts denoted by the man's being rich. It antedates them; the facts become only a sort of secondary coincidence with the rich man's essential nature.

In the case of 'wealth' we all see the fallacy. We know that wealth is but a name for concrete processes that certain men's lives play a part in, and not a natural excellence found in Messrs. Rockefeller and Carnegie, but not in the rest of us.

Like wealth, health also lives *in rebus*. It is a name for processes, as digestion, circulation, sleep, etc., that go on happily, tho in this instance we are more inclined to think of it as a principle and to say the man digests and sleeps so well *because* he is so healthy.

With 'strength' we are, I think, more rationalistic still, and decidedly inclined to treat it as an excellence pre-existing in the man and explanatory of the herculean performances of his muscles.

With 'truth' most people go over the border entirely, and treat the rationalistic account as self-evident. But really all these words in *th* are exactly similar. Truth exists *ante rem* just as much and as little as the other things do.

The scholastics, following Aristotle, made much of the distinction between habit and act. Health *in actu* means, among other things, good sleeping and digesting. But a healthy man need not always be sleeping, or always digesting, any more than a wealthy man need be always handling money or a strong man always lifting weights. All such qualities sink to the status of 'habits' between their times of exercise; and similarly truth becomes a habit of certain of our ideas and beliefs in their intervals of rest from their verifying activities. But those activities are the root of the whole matter, and the condition of there being any habit to exist in the intervals.

'The true', to put it very briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving. Expedient in almost any fashion; and expedient in the long run and on the whole of course; for what meets expediently all the experience in sight won't necessarily meet all farther experiences equally satisfactorily. Experience, as we know, has ways of *boiling over*, and making us correct our present formulas.

The 'absolutely' true, meaning what no farther experience will ever alter, is that ideal vanishing-point towards which we imagine that all our temporary truths will some day converge. It runs on all fours with the perfectly wise man, and with the absolutely complete experience; and, if these ideals are ever realized, they will all be realized together. Meanwhile we have to live to-day by what truth we can get to-day, and be ready to-morrow to call it falsehood. Ptolemaic astronomy, euclidean space, aristotelian logic, scholastic metaphysics, were expedient for centuries, but human experience has boiled over those limits, and we now call these things only relatively true, or true within those borders of experience. 'Absolutely' they are false; for we know that those limits were casual, and might have been transcended by past theorists just as they are by present thinkers.

When new experiences lead to retrospective judgments, using the past tense, what these judgments utter *was* true, even tho no past thinker had been led there. We live forwards, a Danish thinker has said, but we understand backwards. The present sheds a backward light on the world's previous processes. They may have been truth-processes for the actors in them. They are not so for one who knows the later revelations of the story.

This regulative notion of a potential better truth to be established later, possibly to be established some day absolutely, and having powers of retroactive legislation, turns its face, like all pragmatist notions, towards concreteness of fact, and towards the future. Like the half-truths, the absolute truth will have to be *made*, made is a relation incidental to the growth of a mass of verification-experience, to which the half-true ideas are all along contributing their quota.

I have already insisted on the fact that truth is made largely out of previous truths. Men's beliefs at any time are so much experience *funded*. But the beliefs are themselves parts of the sum total of the world's experience, and become matter, therefore, for the next day's funding operations. So far as reality means experienceable reality, both it and the truths men gain about it are everlastingly in process of mutation – mutation towards a definite goal, it may be – but still mutation.

Mathematicians can solve problems with two variables. On the Newtonian theory, for instance, acceleration varies with distance, but distance also varies with acceleration. In the realm of truth-processes facts come independently and determine our beliefs provisionally. But these beliefs make us act, and as fast as they do so, they bring into sight or into existence new facts which re-determine the beliefs accordingly. So the whole coil and ball of truth, as it rolls up, is the product of a double influence. Truths emerge from facts; but they dip forward into facts again and add to them; which facts again create or reveal new truth (the word is indifferent) and so on indefinitely. The 'facts' themselves meanwhile are not *true*. They simply *are*. Truth is the function of the beliefs that start and terminate among them.

The case is like a snowball's growth, due as it is to the distribution of the snow on the one hand, and to the successive pushes of the boys on the other, with these factors co-determining each other incessantly.

The most fateful point of difference between being a rationalist and being a pragmatist is now fully in sight. Experience is in mutation, and our psychological ascertainments of truth are in mutation – so much rationalism will allow; but never that either reality itself or truth itself is mutable. Reality stands complete and ready-made from all eternity, rationalism insists, and the agreement of our ideas with it is that unique unanalyzable virtue in them of which she has already told us. As that intrinsic excellence, their truth has nothing to do with our experiences. It adds nothing to the content of experience. It makes no difference to reality itself; it is supervenient, inert, static, a reflexion merely. It doesn't *exist*, it *holds* or *obtains*, it belongs to another dimension from that of either facts or fact-relations, belongs, in short, to the epistemological dimension – and with that big word rationalism closes the discussion.

Thus, just as pragmatism faces forward to the future, so does rationalism here again face backward to a past eternity. True to her inveterate habit, rationalism reverts to 'principles', and thinks that when an abstraction once is named, we own an oracular solution.

The tremendous pregnancy in the way of consequences for life of this radical difference of outlook will only become apparent in my later lectures. I wish meanwhile to close this lecture by showing that rationalism's sublimity does not save it from inanity.

When, namely, you ask rationalists, instead of accusing pragmatism of desecrating the notion of truth, to define it themselves by saying exactly what *they* understand by it, the only positive attempts I can think of are these two:

1. "Truth is just the system of propositions which have an unconditional claim to be recognized as valid.[1]

2. Truth is a name for all those judgments which we find ourselves under obligation to make by a kind of imperative duty.[2]

The first thing that strikes one in such definitions is their unutterable triviality. They are absolutely true, of course, but absolutely insignificant until you handle them pragmatically. What do you mean by 'claim' here, and what do you mean by 'duty'? As summary names for the concrete reasons why thinking in true ways is overwhelmingly expedient and good for mortal men, it is all right to talk of claims on reality's part to be agreed with, and of obligations on our part to agree. We feel both the claims and the obligations, and we feel them for just those reasons.

[1] A. E. Taylor, *Philosophical Review*, vol. xiv, p. 288.

[2] H. Rickert, *Der Gegenstand der Erkenntniss*, chapter on 'Die Urtheilsnothwendigkeit'.

But the rationalists who talk of claim and obligation *expressly say that they have nothing to do with our practical interests or personal reasons*. Our reasons for agreeing are psychological facts, they say, relative to each thinker, and to the accidents of his life. They are his evidence merely, they are no part of the life of truth itself. That life transacts itself in a purely logical or epistemological, as distinguished from a psychological, dimension, and its claims antedate and exceed all personal motivations whatsoever. Tho neither man nor God should ever ascertain truth, the word would still have to be defined as that which *ought* to be ascertained and recognized.

There never was a more exquisite example of an idea abstracted from the concretes of experience and then used to oppose and negate what it was abstracted from.

Philosophy and common life abound in similar instances. The 'sentimentalist fallacy' is to shed tears over abstract justice and generosity, beauty, etc., and never to know these qualities when you meet them in the street, because there the circumstances make them vulgar. Thus I read in the privately printed biography of an eminently rationalistic mind: "It was strange that with such admiration for beauty in the abstract, my brother had no enthusiasm for fine architecture, for beautiful painting, or for flowers." And in almost the last philosophic work I have read, I find such passages as the following: "Justice is ideal, solely ideal. Reason conceives that it ought to exist, but experience shows that it cannot.... Truth, which ought to be, cannot be.... Reason is deformed by experience. As soon as reason enters experience, it becomes contrary to reason."

The rationalist's fallacy here is exactly like the sentimentalist's. Both extract a quality from the muddy particulars of experience, and find it so pure when extracted that they contrast it with each and all its muddy instances as an opposite and higher nature. All the while it is *their* nature. It is the nature of truths to be validated, verified. It pays for our ideas to be validated. Our obligation to seek truth is part of our general obligation to do what pays. The payments true ideas bring are the sole why of our duty to follow them.

Identical whys exist in the case of wealth and health. Truth makes no other kind of claim and imposes no other kind of ought than health and wealth do. All these claims are conditional; the concrete benefits we gain are what we mean by calling the pursuit a duty. In the case of truth, untrue beliefs work as perniciously in the long run as true beliefs work beneficially. Talking abstractly, the quality 'true' may thus be said to grow absolutely precious, and the quality 'untrue' absolutely damnable: the one may be called good, the other bad, unconditionally. We ought to think the true, we ought to shun the false, imperatively.

But if we treat all this abstraction literally and oppose it to its mother soil in experience, see what a preposterous position we work ourselves into.

We cannot then take a step forward in our actual thinking. When shall I acknowledge this truth and when that? Shall the acknowledgment be loud? – or silent? If sometimes loud, sometimes silent, which *now*? When may a truth go into cold-storage in the encyclopedia? and when shall it come out for battle? Must I constantly be repeating the truth 'twice two are four' because of its eternal claim on recognition? or is it sometimes irrelevant? Must my thoughts dwell night and day on my personal sins and blemishes, because I truly have them? – or may I sink and ignore them in order to be a decent social unit, and not a mass of morbid melancholy and apology?

It is quite evident that our obligation to acknowledge truth, so far from being unconditional, is tremendously conditioned. Truth with a big T, and in the singular, claims abstractly to be recognized, of course; but concrete truths in the plural need be recognized only when their recognition is expedient. A truth must always be preferred to a falsehood when both relate to the situation; but when neither does, truth is as little of a duty as falsehood. If you ask me what o'clock it is and I tell you that I live at 95 Irving Street, my answer may indeed be true, but you don't see why it is my duty to give it. A false address would be as much to the purpose.

With this admission that there are conditions that limit the application of the abstract imperative, *the pragmatistic treatment of truth sweeps back upon us in its fulness*. Our duty to agree with reality is seen to be grounded in a perfect jungle of concrete expediencies.

When Berkeley had explained what people meant by matter, people thought that he denied matter's existence. When Messrs. Schiller and Dewey now explain what people mean by truth, they are accused of denying *its* existence. These pragmatists destroy all objective standards, critics say, and put foolishness and wisdom on one level. A favorite formula for describing Mr. Schiller's doctrines and mine is that we are persons who think that by saying whatever you find it pleasant to say and calling it truth you fulfil every pragmatistic requirement.

I leave it to you to judge whether this be not an impudent slander. Pent in, as the pragmatist more than anyone else sees himself to be, between the whole body of funded truths squeezed from the past and the coercions of the world of sense about him, who so well as he feels the immense pressure of objective control under which our minds perform their operations? If anyone imagines that this law is lax, let him keep its commandment one day, says Emerson. We have heard much of late of the uses of the imagination in science. It is high time to urge the use of a little imagination in philosophy. The unwillingness of some of our critics to read any but the silliest of possible meanings into our statements is as discreditable to their imaginations as anything I know in recent philosophic history. Schiller says the true is that which 'works'. Thereupon he is treated as one who limits verification to the lowest material utilities. Dewey says truth is what gives 'satisfaction'.

He is treated as one who believes in calling everything true which, if it were true, would be pleasant.

Our critics certainly need more imagination of realities. I have honestly tried to stretch my own imagination and to read the best possible meaning into the rationalist conception, but I have to confess that it still completely baffles me. The notion of a reality calling on us to 'agree' with it, and that for no reasons, but simply because its claim is 'unconditional' or 'transcendent', is one that I can make neither head nor tail of. I try to imagine myself as the sole reality in the world, and then to imagine what more I would 'claim' if I were allowed to. If you suggest the possibility of my claiming that a mind should come into being from out of the void inane and stand and *copy* me, I can indeed imagine what the copying might mean, but I can conjure up no motive. What good it would do me to be copied, or what good it would do that mind to copy me, if farther consequences are expressly and in principle ruled out as motives for the claim (as they are by our rationalist authorities) I cannot fathom. When the Irishman's admirers ran him along to the place of banquet in a sedan chair with no bottom, he said, "Faith, if it wasn't for the honor of the thing, I might as well have come on foot." So here: but for the honor of the thing, I might as well have remained uncopied. Copying is one genuine mode of knowing (which for some strange reason our contemporary transcendentalists seem to be tumbling over each other to repudiate); but when we get beyond copying, and fall back on unnamed forms of agreeing that are expressly denied to be either copyings or leadings or fittings, or any other processes pragmatically definable, the *what* of the 'agreement' claimed becomes as unintelligible as the why of it. Neither content nor motive can be imagined for it. It is an absolutely meaningless abstraction.[3]

Surely in this field of truth it is the pragmatists and not the rationalists who are the more genuine defenders of the universe's rationality.

[3] I am not forgetting that Professor Rickert long ago gave up the whole notion of truth being founded on agreement with reality. Reality, according to him, is whatever agrees with truth, and truth is founded solely on our primal duty. This fantastic flight, together with Mr. Joachim's candid confession of failure in his book *The Nature of Truth*, seems to me to mark the bankruptcy of rationalism when dealing with this subject. Rickert deals with part of the pragmatistic position under the head of what he calls 'Relativismus'. I cannot discuss his text here. Suffice it to say that his argumentation in that chapter is so feeble as to seem almost incredible in so generally able a writer.

HUMANISM AND TRUTH

William James, "Humanism and Truth." (New York: Longmans, Green and Co., 1909), chap. 3, pp. 51–101.

Receiving from the Editor of an advance proof of Mr. Bradley's article on 'Truth and Practice', I understand this as a hint to me to join in the controversy over 'Pragmatism' which seems to have seriously begun. As my name has been coupled with the movement, I deem it wise to take the hint, the more so as in some quarters greater credit has been given me than I deserve, and probably undeserved discredit in other quarters falls also to my lot.

First, as to the word 'pragmatism'. I myself have only used the term to indicate a method of carrying on abstract discussion. The serious meaning of a concept, says Mr. Peirce, lies in the concrete difference to some one which its being true will make. Strive to bring all debated conceptions to that 'pragmatic' test, and you will escape vain wrangling: if it can make no practical difference which of two statements be true, then they are really one statement in two verbal forms; if it can make no practical difference whether a given statement be true or false, then the statement has no real meaning. In neither case is there anything fit to quarrel about: we may save our breath, and pass to more important things.

All that the pragmatic method implies, then, is that truths should practical[1] consequences. In England the word has been used more broadly still, to cover the notion that the truth of any statement *consists* in the consequences, and particularly in their being good consequences. Here we get beyond affairs of method altogether; and since my pragmatism and this wider pragmatism are so different, and both an important enough to have different names, I think that Mr. Schiller's proposal to call the wider pragmatism by the name of 'humanism' is excellent and ought to be adopted. The narrower pragmatism may still be spoken of as the 'pragmatic method'.

I have read in the past six months many hostile reviews of Schiller's and Dewey's publications; but with the exception of Mr. Bradley's elaborate indictment, they are out of reach where I write, and I have largely forgotten them. I think that a free discussion of the subject on my part would in any case be more useful than a polemic attempt at rebutting these criticisms in

[1] ['Practical' in the sense of, of course, not in the sense that the consequences may not be as well as physical.]

detail. Mr. Bradley in particular can be taken care of by Mr. Schiller. He repeatedly confesses himself unable to comprehend Schiller's views, he evidently has not sought to do so sympathetically, and I deeply regret to say that his laborious article throws, for my mind, absolutely no useful light upon the subject. It seems to me on the whole ar and I feel free to disregard it altogether.

The subject is unquestionably difficult. Messrs. Dewey's and Schiller's thought is eminently an induction, a generalization working itself free from all sorts of entangling particulars. If true, it involves much restatement of traditional notions. This is a kind of intellectual product that never attains a classic form of expression when first promulgated. The critic ought therefore not to be too sharp and logic-chopping in his dealings with it, but should weigh it as a whole, and especially weigh it against its possible alternatives. One should also try to apply it first to one instance, and then to another to see how it will work. It seems to me that it is emphatically not a case for instant execution, by conviction of intrinsic absurdity or of self-contradiction, or by caricature of what it would look like if reduced to skeleton shape. Humanism is in fact much more like one of those secular changes that come upon public opinion overnight, as it were, borne upon tides 'too deep for sound or foam', that survive all the crudities and extravagances of their advocates, that you can pin to no one absolutely essential statement, nor kill by any one decisive stab.

Such have been the changes from aristocracy to democracy, from classic to romantic taste, from theistic to pantheistic feeling, from static to evolutionary ways of understanding life – changes of which we all have been spectators. Scholasticism still opposes to such changes the method of confutation by single decisive reasons, showing that the new view involves self-contradiction, or traverses some fundamental principle. This is like stopping a river by planting a stick in the middle of its bed. Round your obstacle flows the water and 'gets there all the same'. In reading some of our opponents, I am not a little reminded of those catholic writers who refute darwinism by telling us that higher species cannot come from lower because *minus plus*, or that the notion of transformation is absurd, for it implies that species tend to their own destruction, and that would violate the principle that every reality tends to persevere in its own shape. The point of view is too myopic, too tight and close to take in the inductive argument. Wide generalizations in science always meet with these summary refutations in their early days; but they outlive them, and the refutations then sound oddly antiquated and scholastic. I cannot help suspecting that the humanistic theory is going through this kind of would-be refutation at present.

The one condition of understanding humanism is to become inductive-minded oneself, to drop rigorous definitions, and follow lines of least resistance 'on the whole'. "In other words," an opponent might say, "resolve your

intellect into a kind of slush." "Even so," I make reply, – "if you will consent to use no politer word." For humanism, conceiving the more 'true' as the more 'satisfactory' (Dewey's term), has sincerely to renounce rectilinear arguments and ancient ideals of rigor and finality. It is in just this temper of renunciation, so different from that of pyrrhonistic scepticism, that the spirit of humanism essentially consists. Satisfactoriness has to be measured by a multitude of standards, of which some, for aught we know, may fail in any given case; and what is more satisfactory than any alternative in sight, may to the end be a sum of *pluses* and concerning which we can only trust that by ulterior corrections and improvements a maximum of the one and a minimum of the other may some day be approached. It means a real change of heart, a break with absolutistic hopes, when one takes up this inductive view of the conditions of belief.

As I understand the pragmatist way of seeing things, it owes its being to the break-down which the last fifty years have brought about in the older notions of scientific truth. "God geometrizes," it used to be said; and it was believed that Euclid's elements literally reproduced his geometrizing. There is an eternal and unchangeable 'reason'; and its voice was supposed to reverberate in and So also of the 'laws of nature', physical and chemical, so of natural history classifications – all were supposed to be exact and exclusive duplicates of pre-human archetypes buried in the structure of things, to which the spark of divinity hidden in our intellect enables us to penetrate. The anatomy of the world is logical, and its logic is that of a university professor, it was thought. Up to about 1850 almost every one believed that sciences expressed truths that were exact copies of a definite code of non-human realities. But the enormously rapid multiplication of theories in these latter days has well-nigh upset the notion of any one of them being a more literally objective kind of thing than another. There are so many geometries, so many logics, so many physical and chemical hypotheses, so many classifications, each one of them good for so much and yet not good for everything, that the notion that even the truest formula may be a human device and not a literal transcript has dawned upon us. We hear scientific laws now treated as so much 'conceptual shorthand', true so far as they are useful but no farther. Our mind has become tolerant of symbol instead of reproduction, of approximation instead of exactness, of plasticity instead of rigor. 'Energetics', measuring the bare face of sensible phenomena so as to describe in a single formula all their changes of 'level', is the last word of this scientific humanism, which indeed leaves queries enough outstanding as to the reason for so curious a congruence between the world and the mind, but which at any rate makes our whole notion of scientific truth more flexible and genial than it used to be.

It is to be doubted whether any theorizer to-day, either in mathematics, logic, physics or biology, conceives himself to be literally re-editing processes of nature or thoughts of God. The main forms of our thinking, the separation

of subjects from predicates, the negative, hypothetic and disjunctive judgments, are purely human habits. The ether, as Lord Salisbury said, is only a noun for the verb to undulate; and many of our theological ideas are admitted, even by those who call them 'true', to be humanistic in like degree.

I fancy that these changes in the current notions of truth are what originally gave the impulse to Messrs. Dewey's and Schiller's views. The suspicion is in the air nowadays that the superiority of one of our formulas to another may not consist so much in its literal 'objectivity', as in subjective qualities like its usefulness, its 'elegance' or its congruity with our residual beliefs. Yielding to these suspicions, and generalizing, we fall into something like the humanistic state of mind. Truth we conceive to mean everywhere, not duplication, but addition; not the constructing of inner copies of already complete realities, but rather the collaborating with realities so as to bring about a clearer result. Obviously this state of mind is at first full of vagueness and ambiguity. 'Collaborating' is a vague term; it must at any rate cover conceptions and logical arrangements. 'Clearer' is vaguer still. Truth must bring clear thoughts, as well as clear the way to action. 'Reality' is the vaguest term of all. The only way to test such a programme at all is to apply it to the various types of truth, in the hope of reaching an account that shall be more precise. Any hypothesis that forces such a review upon one has one great merit, even if in the end it prove invalid: it gets us better acquainted with the total subject. To give the theory plenty of 'rope' and see if it hangs itself eventually is better tactics than to choke it off at the outset by abstract accusations of self-contradiction. I think therefore that a decided effort at sympathetic mental play with humanism is the provisional attitude to be recommended to the reader.

When I find myself playing sympathetically with humanism, something like what follows is what I end by conceiving it to mean.

Experience is a process that continually gives us new material to digest. We handle this intellectually by the mass of beliefs of which we find ourselves already possessed, assimilating, rejecting, or rearranging in different degrees. Some of the apperceiving ideas are recent acquisitions of our own, but most of them are common-sense traditions of the race. There is probably not a common-sense tradition, of all those which we now live by, that was not in the first instance a genuine discovery, an inductive generalization like those more recent ones of the atom, of inertia, of energy, of reflex action, or of fitness to survive. The notions of one Time and of one Space as single continuous receptacles; the distinction between thoughts and things, matter and mind; between permanent subjects and changing attributes; the conception of classes with subclasses within them; the separation of fortuitous from regularly caused connections; surely all these were once definite conquests made at historic dates by our ancestors in their attempts to get the chaos of their crude individual experiences into a more shareable and manageable shape. They proved of such sovereign use as that they are now

a part of the very structure of our mind. We cannot play fast and loose with them. No experience can upset them. On the contrary, they apperceive every experience and assign it to its place.

To what effect? That we may the better foresee the course of our experiences, communicate with one another, and steer our lives by rule. Also that we may have a cleaner, clearer, more inclusive mental view.

The greatest common-sense achievement, after the discovery of one Time and one Space, is probably the concept of permanently existing things. When a rattle first drops out of the hand of a baby, he does not look to see where it has gone. Non-perception he accepts as annihilation until he finds a better belief. That our perceptions mean rattles that are there whether we hold them in our hands or not, becomes an interpretation so luminous of what happens to us that, once employed, it never gets forgotten. It applies with equal felicity to things and persons, to the objective and to the ejective realm. However a Berkeley, a Mill, or a Cornelius may criticise it, it *works*; and in practical life we never think of 'going back' upon it, or reading our incoming experiences in any other terms. We may, indeed, speculatively imagine a state of 'pure' experience before the hypothesis of permanent objects behind its flux had been framed; and we can play with the idea that some primeval genius might have struck into a different hypothesis. But we cannot positively imagine today what the different hypothesis could have been, for the category of transperceptual reality is now one of the foundations of our life. Our thoughts must still employ it if they are to possess reasonableness and truth.

This notion of a in the shape of a most chaotic pure experience which sets us questions, of a *second* in the way of fundamental categories, long ago wrought into the structure of our consciousness and practically irreversible, which define the general frame within which answers must fall, and of *a* which gives the detail of the answers in the shapes most congruous with all our present needs, is, as I take it, the essence of the humanistic conception. It represents experience in its pristine purity to be now so enveloped in predicates historically worked out that we can think of it as little more than an of *a* which the mind, in Mr. Bradley's phrase, 'encounters', and to whose stimulating presence we respond by ways of thinking which we call 'true' in proportion as they facilitate our mental or physical activities and bring us outer power and inner peace. But whether the Other, the universal has itself any definite inner structure, or whether, if it have any, the structure resembles any of our predicates this is a question which humanism leaves untouched. For us, at any rate, it insists, reality is an accumulation of our own intellectual inventions, and the struggle for 'truth' in our progressive dealings with it is always a struggle to work in new nouns and adjectives while altering as little as possible the old.

It is hard to see why either Mr. Bradley's own logic or his metaphysics should oblige him to quarrel with this conception. He might consistently

adopt it if he would, and simply throw his peculiar absolute round it, following in this the good example of Professor Royce. Bergson in France, and his disciples, Wilbois the physicist and Leroy, are thoroughgoing humanists in the sense defined. Professor Milhaud also appears to be one; and the great Poincaré misses it by only the breadth of a hair. In Germany the name of Simmel offers itself as that of a humanist of the most radical sort. Mach and his school, and Hertz and Ostwald must be classed as humanists. The view is in the atmosphere and must be patiently discussed.

The best way to discuss it would be to see what the alternative might be. What is it indeed? Its critics make no explicit statement, Professor Royce being the only one so far who has formulated anything definite. The first service of humanism to philosophy accordingly seems to be that it will probably oblige those who dislike it to search their own hearts and heads. It will force analysis to the front and make it the order of the day. At present the lazy tradition that truth is seems all there is to contradict it with. Mr. Bradley's only suggestion is that true thought 'must correspond to a determinate being which it cannot be said to make', and obviously that sheds no new light. What is the meaning of the word to 'correspond'? Where is the 'being'? What sort of things are, 'determinations', and what is meant in this particular case by 'not to make'?

Humanism proceeds immediately to refine upon the looseness of these epithets. We correspond in *some* way with anything with which we enter into any relations at all. If it be a thing, we may produce an exact copy of it, or we may simply feel it as an existent in a certain place. If it be a demand, we may obey it without knowing anything more about it than its push. If it be a proposition, we may agree by not contradicting it, by letting it pass. If it be a relation between things, we may act on the first thing so as to bring ourselves out where the second will be. If it be something inaccessible, we may substitute a hypothetical object for it, which, having the same consequences, will cipher out for us real results. In a general way we may simply to it; and and the whole situation harmoniously prolongs and enriches itself, the thought will pass for true.

As for the whereabouts of the beings thus corresponded to, although they may be outside of the present thought as well as in it, humanism sees no ground for saying they are outside of finite experience itself. Pragmatically, their reality means that we submit to them, take account of them, whether we like to or not, but this we must perpetually do with experiences other than our own. The whole system of what the present experience must correspond to 'adequately' may be continuous with the present experience itself. Reality, so taken as experience other than the present, might be either the legacy of past experience or the content of experience to come. Its determinations for are in any case the adjectives which our acts of judging fit to it, and those are essentially humanistic things.

To say that our thought does not 'make' this reality means pragmatically that if our own particular thought were annihilated the reality would still be there in some shape, though possibly it might be a shape that would lack something that our thought supplies. That reality is 'independent' means that there is something in every experience that escapes our arbitrary control. If it be a sensible experience it coerces our attention; if a sequence, we cannot invert it; if we compare two terms we can come to only one result. There is a push, an urgency, within our very experience, against which we are on the whole powerless, and which drives us in a direction that is the destiny of our belief. That this drift of experience itself is in the last resort due to something independent of all possible experience may or may not be true. There may or may not be an extra-experiential 'ding an sich' that keeps the ball rolling, or an 'absolute' that lies eternally behind all the successive determinations which human thought has made. But within our experience at any rate, humanism says, some determinations show themselves as being independent of others; some questions, if we ever ask them, can only be answered in one way; some beings, if we ever suppose them, must be supposed to have existed previously to the supposing; some relations, if they exist ever, must exist as long as their terms exist.

Truth thus means, according to humanism, the relation of less fixed parts of experience (predicates) to other relatively more fixed parts (subjects); and we are not required to seek it in a relation of experience as such to anything beyond itself. We can stay at home, for our behavior as experients is hemmed in on every side. The forces both of advance and of resistance are exerted by our own objects, and the notion of truth as something opposed to waywardness or license inevitably grows up solipsistically inside of every human life.

So obvious is all this that a common charge against the humanistic authors 'makes me tired'. "How can a deweyite discriminate sincerity from bluff?" was a question asked at a philosophic meeting where I reported on Dewey's can the mere[2] pragmatist feel any duty to think truly?" is the objection urged by Professor Royce. Mr. Bradley in turn says that if a humanist understands his own doctrine, he "must hold ... any idea, however mad, to be the truth, if any one will have it so." And Professor Taylor describes pragmatism as believing anything one pleases and calling it truth.

Such a shallow sense of the conditions under which men's thinking actually goes on seems to me most surprising. These critics appear to suppose that, if left to itself, the rudderless raft of our experience must be ready to drift anywhere or nowhere. Even tho there were compasses on board, they seem to say, there would be no pole for them to point to. There must be absolute

[2] I know of no 'mere' pragmatist, if here means, as it seems, the denial of all concreteness to the pragmatist's thought.

sailing-directions, they insist, decreed from outside, and an independent chart of the voyage added to the 'mere' voyage itself, if we are ever to make a port. But is it not obvious that even tho there be such absolute sailing-directions in the shape of pre-human standards of truth that we to follow, the only guarantee that we shall in fact follow them must lie in our human equipment. The 'ought' would be a there were a felt grain inside of our experience that conspired. As a matter of fact the devoutest believers in absolute standards must admit that men fail to obey them. Waywardness is here, in spite of the eternal prohibitions, and the existence of any amount of reality no warrant against unlimited error *in* being incurred. The only guarantee we have against licentious thinking is the circumpressure of experience itself, which gets us sick of concrete errors, whether there be a trans-empirical reality or not. How does the partisan of absolute reality know what this orders him to think? He cannot get direct sight of the absolute; and he has no means of guessing what it wants of him except by following the humanistic clues. The only truth that he himself will ever practically be that to which his finite experiences lead him of themselves. The state of mind which shudders at the idea of a lot of experiences left to themselves, and that augurs protection from the sheer name of an absolute, as if, however inoperative, that might still stand for a sort of ghostly security, is like the mood of those good people who, whenever they hear of a social tendency that is damnable, begin to redden and to puff, and say 'Parliament or Congress ought to make a law against it', as if an impotent decree would give relief.

All the *sanctions* of a law of truth lie in the very texture of experience. Absolute or no absolute, the concrete truth *for us* will always be that way of thinking in which our various experiences most profitably combine.

And yet, the opponent obstinately urges, your humanist will always have a greater liberty to play fast and loose with truth than will your believer in an independent realm of reality that makes the standard rigid. If by this latter believer he means a man who pretends to know the standard and who fulminates it, the humanist will doubtless prove more flexible; but no more flexible than the absolutist himself if the latter follows (as fortunately our present-day absolutists do follow) empirical methods of inquiry in concrete affairs. To consider hypotheses is surely always better than to dogmatize.

Nevertheless this probable flexibility of temper in him has been used to convict the humanist of sin. Believing as he does, that truth lies and is at every moment our own line of most propitious reaction, he stands forever debarred, as I have heard a learned colleague say, from trying to convert opponents, for does not their view, being most propitious momentary reaction, already fill the bill? Only the believer in the brand of truth can on this theory seek to make converts without self-stultification. But can there be self-stultification in urging any account whatever of truth? Can the definition ever contradict the deed? "Truth is what I feel like saying" – suppose that to be the definition.

"Well, I feel like saying that, and I want you to feel like saying it, and shall continue to say it until I get you to agree." Where is there any contradiction? Whatever truth may be said to be, that is the kind of truth which the saying can be held to carry. The which a saying may comport is an extra-logical matter. It may indeed be hotter in some individual absolutist than in a humanist, but it need not be so in another. And the humanist, for his part, is perfectly consistent in compassing sea and land to make one proselyte, if his nature be enthusiastic enough.

"But how be enthusiastic over any view of things which you know to have been partly made by yourself, and which is liable to alter during the next minute? How is any heroic devotion to the ideal of truth possible under such paltry conditions?"

This is just another of those objections by which the anti-humanists show their own comparatively slack hold on the realities of the situation. If they would only follow the pragmatic method and ask: "What is truth? What does its existence stand for in the way of concrete goods?" – they would see that the name of it is the of almost everything that is valuable in our lives. The true is the opposite of whatever is instable, of whatever is practically disappointing, of whatever is useless, of whatever is lying and unreliable, of whatever is unverifiable and unsupported, of whatever is inconsistent and contradictory, of whatever is artificial and eccentric, of whatever is unreal in the sense of being of no practical account. Here are pragmatic reasons with a vengeance why we should turn to truth – truth saves us from a world of that complexion. What wonder that its very name awakens loyal feeling! In particular what wonder that all little provisional fool's paradises of belief should appear contemptible in comparison with its bare pursuit! When absolutists reject humanism because they feel it to be untrue, that means that the whole habit of their mental needs is wedded already to a different view of reality, in comparison with which the humanistic world seems but the whim of a few irresponsible youths. Their own subjective apperceiving mass is what speaks here in the name of the eternal natures and bids them reject our humanism – as they apprehend it. Just so with us humanists, when we condemn all noble, clean-cut, fixed, eternal, rational, temple-like systems of philosophy. These contradict the nature, as our dealings with nature and our habits of thinking have so far brought us to conceive it. They seem oddly personal and artificial, even when not bureaucratic and professional in an absurd degree. We turn from them to the great unpent and unstayed wilderness of truth as we feel it to be constituted, with as good a conscience as rationalists are moved by when they turn from our wilderness into their neater and cleaner intellectual abodes.[3]

[3] [I cannot forbear quoting as an illustration of the contrast between humanist and rationalist tempers of mind, in a sphere remote from philosophy, these remarks on the

This is surely enough to show that the humanist does not ignore the character of objectivity and independence in truth. Let me turn next to what his opponents mean when they say that to be true, our thoughts must 'correspond'.

The vulgar notion of correspondence here is that the thoughts must *copy* the reality – cognitio fit p[illegible] cogniti et cognoscentis; and philosophy, without having ever fairly sat down to the question, seems to have instinctively accepted this idea: propositions are held true if they copy the eternal thought; terms are held true if they copy extra-mental realities. Implicitly, I think that the copy-theory has animated most of the criticisms that have been made on humanism.

A priori, however, it is not self-evident that the sole business of our mind with realities should be to copy them. Let my reader suppose himself to constitute for a time all the reality there is in the universe, and then to receive the announcement that another being is to be created who shall know him truly. How will he represent the knowing in advance? What will he hope it to be? I doubt extremely whether it could ever occur to him to fancy it as a mere copying. Of what use to him would an imperfect second edition of himself in the new comer's interior be? It would seem pure waste of a propitious opportunity. The demand would more probably be for something absolutely new. The reader would conceive the knowing humanistically, "the new comer," he would say, "mus[illegible] If copying be requisite to that end, let there be copying; otherwise not." The essence in any case would not be the copying, but the enrichment of the previous world.

I read the other day, in a book of Professor Eucken's, a phrase, " which seems to be pertinent here. Why may not thought's mission be to increase and elevate, rather than simply to imitate and reduplicate, existence? No one who has read Lotze can fail to remember his striking comment on the ordinary view of the secondary qualities of matter, which brands them as 'illusory' because they copy nothing in the thing. The notion of a world complete in itself, to which thought comes as a passive mirror, adding nothing to fact,

Dreyfus 'affaire', written by one who assuredly had never heard of humanism or pragmatism. "Autant que la Révolution, l'Affaire est désormais une de nos 'origines'. Si elle n'a pas fait ouvrir le gouffre, ... c'est elle du moins qui a rendu patent et visible le long travail souterrain qui, silencieusement, avait preparé la séparation entre nos deux camps d'aujourd'hui, pour écarter enfin, d'un coup soudai[illegible] France révolutionnaire et romantique si l'on veut, celle qui met très haut l'individu, qui ne veut pas qu'un juste périsse fûtce pour sauver la nation, et qui cherche la vérité dans toutes ses parties aussi bien que dans une vue d'ensemble.... Duclaux ne pouvait pas concevoir qu'on préferât quelque chose à la vérité. Mais il voyait autour de lui de fort honnêtes gens qui, mettant en balance la vie d'un homme et la raison d'Etat, lui avouaient de quel poids léger ils jugeaient une simple existence individuelle, pour innocente qu'elle fû[illegible] par Mme. Em. D., Laval, 1906, pp. 243, 247–248.]

Lotze says is irrational. Rather is thought itself a most momentous part of fact, and the whole mission of the pre-existing and insufficient world of matter may simply be to provoke thought to produce its far more precious supplement.

'Knowing', in short, may, for aught we can see beforehand to the contrary, be *only one way of getting into fruitful relations with reality*, whether copying be one of the relations or not.

It is easy to see from what special type of knowing the copy-theory arose. In our dealings with natural phenomena the great point is to be able to foretell. Foretelling, according to such a writer as Spencer, is the whole meaning of intelligence. When Spencer's 'law of intelligence' says that inner and outer relations must 'correspond', it means that the distribution of terms in our inner time-scheme and space-scheme must be an exact copy of the distribution in real time and space of the real terms. In strict theory the mental terms themselves need not answer to the real terms in the sense of severally copying them, symbolic mental terms being enough, if only the real dates and places be copied. But in our ordinary life the mental terms are images and the real ones are sensations, and the images so often copy the sensations, that we easily take copying of terms as well as of relations to be the natural significance of knowing. Meanwhile much, even of this common descriptive truth, is couched in verbal symbols. If our symbols *fit* the world, in the sense of determining our expectations rightly, they may even be the better for not copying its terms.

It seems obvious that the pragmatic account of all this routine of phenomenal knowledge is accurate. Truth here is a relation, not of our ideas to non-human realities, but of conceptual parts of our experience to sensational parts. Those thoughts are true which guide us to with sensible particulars as they occur, whether they copy these in advance or not.

From the frequency of copying in the knowledge of phenomenal fact, copying has been supposed to be the essence of truth in matters rational also. Geometry and logic, it has been supposed, must copy archetypal thoughts in the Creator. But in these abstract spheres there is no need of assuming archetypes. The mind is free to carve so many figures out of space, to make so many numerical collections, to frame so many classes and series, and it can analyze and compare so endlessly, that the very superabundance of the resulting ideas makes us doubt the 'objective' pre-existence of their models. It would be plainly wrong to suppose a God whose thought consecrated rectangular but not polar co-ordinates, or Jevons's notation but not Boole's. Yet if, on the other hand, we assume God to have thought in advance of every flight of human fancy in these directions, his mind becomes too much like a Hindoo idol with three heads, eight arms and six breasts, too much made up of superfoetation and redundancy for us to wish to copy it, and the whole notion of copying tends to evaporate from these sciences. Their

objects can be better interpreted as being created step by step by men, as fast as they successively conceive them.

If now it be asked how, if triangles, squares, square roots, genera, and the like, are but improvised human 'artefacts', their properties and relations can be so promptly known to be 'eternal', the humanistic answer is easy. If triangles and genera are of our own production we can keep them invariant. We can make them 'timeless' by expressly decreeing that on *the we* time shall exert no altering effect, that they are intentionally and it may be fictitiously abstracted from every corrupting real associate and condition. But relations between invariant objects will themselves be invariant. Such relations cannot be happenings, for by hypothesis nothing shall happen to the objects. I have tried to show in the last chapter of my *Principles of Psychology*[4] that they can only be relations of comparison. No one so far seems to have noticed my suggestion, and I am too ignorant of the development of mathematics to feel very confident of my own view. But if it were correct it would solve the difficulty perfectly. Relations of comparison are matters of direct inspection. As soon as mental objects are mentally compared, they are perceived to be either like or unlike. But once the same, always the same, once different, always different, under these timeless conditions. Which is as much as to say that truths concerning these man-made objects are necessary and eternal. We can change our conclusions only by changing our data first.

The whole fabric of the sciences can thus be treated as a man-made product. As Locke long ago pointed out, these sciences have no immediate connection with fact. Only *if* a fact can be humanized by being identified with any of these ideal objects, is what was true of the objects now true also of the facts. The truth itself meanwhile was originally a copy of nothing; it was only a relation directly perceived to obtain between two artificial mental things.[5]

We may now glance at some special types of knowing, so as to see better whether the humanistic account fits. On the mathematical and logical types we need not enlarge further, nor need we return at much length to the case of our descriptive knowledge of the course of nature. So far as this involves anticipation, tho that *may* mean copying, it need, as we saw, mean little more than 'getting ready' in advance. But with many distant and future objects, our practical relations are to the last degree potential and remote. In no sense can we now get ready for the arrest of the earth's revolution by the tidal brake, for instance; and with the past, tho we suppose ourselves to know it truly, we have no practical relations at all. It is obvious that, altho interests strictly practical have been the original starting-point of our search for true phenomenal descriptions, yet an intrinsic interest in the bare describing

[4] Vol. ii, pp. 641 ff.

[5] [Mental things which are realities of course within the mental world.]

function has grown up. We wish accounts that shall be true, whether they bring collateral profit or not. The primitive function has developed its demand for mere exercise. This theoretic curiosity seems to be the characteristically human and humanism recognizes its enormous scope. A true idea now means not only one that prepares us for an actual perception. It means also one that might prepare us for a merely possible perception, or one that, if spoken, would suggest possible perceptions to others, or suggest actual perceptions which the speaker cannot share. The of perceptions thus thought of as either actual or possible form a system which it is obviously advantageous to us to get into a stable and consistent shape; and here it is that the common-sense notion of permanent beings finds triumphant use. Beings acting outside of the thinker explain, not only his actual perceptions, past and future, but his possible perceptions and those of every one else. Accordingly they gratify our theoretic need in a supremely beautiful way. We pass from our immediate actual through them into the foreign and the potential, and back again into the future actual, accounting for innumerable particulars by a single cause. As in those circular panoramas, where a real foreground of dirt, grass, bushes, rocks and a broken-down cannon is enveloped by a canvas picture of sky and earth and of a raging battle, continuing the foreground so cunningly that the spectator can detect no joint; so these conceptual objects, added to our present perceptual reality, fuse with it into the whole universe of our belief. In spite of all berkeleyan criticism, we do not doubt that they are really there. Tho our discovery of any one of them may only date from now, we unhesitatingly say that it not only *is*, but *was* there, if, by so saying, the past appears connected more consistently with what we feel the present to be. This is historic truth. Moses wrote the Pentateuch, we think, because if he didn't, all our religious habits will have to be undone. Julius Caesar was real, or we can never listen to history again. Trilobites were once alive, or all our thought about the strata is at sea. Radium, discovered only yesterday, must always have existed, or its analogy with other natural elements, which are permanent, fails. In all this, it is but one portion of our beliefs reacting on another so as to yield the most satisfactory total state of mind. That state of mind, we say, sees truth, and the content of its deliverances we believe.

Of course, if you take the satisfactoriness concretely, as something felt by you now, and if, by truth, you mean truth taken abstractly and verified in the long run, you cannot make them equate, for it is notorious that the temporarily satisfactory is often false. Yet at each and every concrete moment, truth for each man is what that man 'troweth' at that moment with the maximum of satisfaction to himself; and similarly, abstract truth, truth verified by the long run, and abstract satisfactoriness, long-run satisfactoriness, coincide. If, in short, we compare concrete with concrete and abstract with abstract, the true and the satisfactory do mean the same thing.

I suspect that a certain muddling of matters hereabouts is what makes the general philosophic public so impervious to humanism's claims.

The fundamental fact about our experience is that it is a process of change. For the 'trower' at any moment, truth, like the visible area round a man walking in a fog, or like what George Eliot calls "the wall of dark seen by small fishes eyes that pierce a span in the wide Ocean," is an objective field which the next moment enlarges and of which it is the critic, and which then either suffers alteration or is continued unchanged. The critic sees both the first trower's truth and his own truth, compares them with each other, and verifies or confutes. *His* field of view is the reality independent of that earlier trower's thinking with which that thinking ought to correspond. But the critic is himself only a trower; and if the whole process of experience should terminate at that instant, there would be no otherwise known independent reality with which *his* thought might be compared.

The immediate in experience is always provisionally in this situation. The humanism, for instance, which I see and try so hard to defend, is the completest truth attained from my point of view up to date. But, owing to the fact that all experience is a process, no point of view can ever be last one. Every one is insufficient and off its balance, and responsible to later points of view than itself. You, occupying some of these later points in your own person, and believing in the reality of others, will not agree that my point of view sees truth positive, truth timeless, truth that counts, unless they verify and confirm what it sees.

You generalize this by saying that any opinion, however satisfactory, can count positively and absolutely as true only so far as it agrees with a standard beyond itself; and if you then forget that this standard perpetually grows up endogenously inside the web of the experiences, you may carelessly go on to say that what distributively holds of each experience, holds also collectively of all experience, and that experience as such and in its totality owes whatever truth it may be possessed-of to its correspondence with absolute realities outside of its own being. This evidently is the popular and traditional position. From the fact that finite experiences must draw support from one another, philosophers pass to the notion that experience must need an absolute support. The denial of such a notion by humanism lies probably at the root of most of the dislike which it incurs.

But is this not the globe, the elephant and the tortoise over again? Must not something end by supporting itself? Humanism is willing to let finite experience be self-supporting. Somewhere being must immediately breast nonentity. Why may not the advancing front of experience, carrying its immanent satisfactions and dissatisfactions, cut against the black inane as the luminous orb of the moon cuts the caerulean abyss? Why should anywhere the world be absolutely fixed and finished? And if reality genuinely grows, why may it not grow in these very determinations which here and now are made?

In point of fact it actually seems to grow by our mental determinations, be these never so 'true'. Take the 'great bear' or 'dipper' constellation in the heavens. We call it by that name, we count the stars and call them seven, we say they were seven before they were counted, and we say that whether any one had ever noted the fact or not, the dim resemblance to a long-tailed (or long-necked?) animal was always truly there. But what do we mean by this projection into past eternity of recent human ways of thinking? Did an 'absolute' thinker actually do the counting, tell off the stars upon his standing number-tally, and make the bear-comparison, silly as the latter is? Were they explicitly seven, explicitly bear-like, before the human witness came? Surely nothing in the truth of the attributions drives us to think this. They were only implicitly or virtually what we call. them, and we human witnesses first explicated them and made them 'real'. A fact virtually pre-exists when every condition of its realization save one is already there. In this case the condition lacking is the act of the counting and comparing mind. But the stars (once the mind considers them) themselves dictate the result. The counting in no wise modifies their previous nature, and, they being what and where they are, the count cannot fall out differently. It could then be made the number seven be, questioned.

We have here a quasi-paradox. Undeniably something comes by the counting that was not there before. And yet that something In one sense you create it, and in another sense you it. You have to treat your count as being true beforehand, the moment you come to treat the matter at all.

Our stellar attributes must always be called true, then; yet none the less are they genuine additions made by our intellect to the world of fact. Not additions of consciousness only, but additions of 'content'. They copy nothing that pre-existed, yet they agree with what preexisted, fit it, amplify it, relate and connect it with a 'wain', a number-tally, or what not, and build it out. It seems to me that humanism is the only theory that builds this case out in the good direction, and this case stands for innumerable other kinds of case. In all such cases, odd as it may sound, our judgment may actually be said to retroact and to enrich the past.

Our judgments at rate change the character of *future* reality by the acts to which they lead. Where these acts are acts expressive of trust – trust, *e.g.*, that a man is honest, that our health is good enough, or that we can make a successful effort – which acts may be a needed antecedent of the trusted things becoming true, Professor Taylor says[6] that our trust is at any rate before the action; and I seem to remember that he disposes of anything like a faith in the general excellence of the universe (making the faithful person's part in it at

[6] In an article criticizing Pragmatism (as he conceives it) in the *McGill* published at Montreal, for May, 1904.

any rate more excellent) as a 'lie in the soul'. But the pathos of this expression should not blind us to the complication of the facts. I doubt whether Professor Taylor would himself be in favor of practically handling trusters of these kinds as liars. Future and present really mix in such emergencies, and one can always escape lies in them by using hypothetic forms. But Mr. Taylor's attitude suggests such absurd possibilities of practice that it seems to me to illustrate beautifully how self-stultifying the conception of a truth that shall merely register a standing fixture may become. Theoretic truth, truth of passive copying, sought in the sole interests of copying as such, not because copying i but because copying ought to be, seems, if you look at it coldly, to be an almost preposterous ideal. Why should the universe, existing in itself, also exist in copies? How it be copied in the solidity of its objective fulness? And even if it could, what would the motive be? "Even the hairs of your head are numbered." Doubtless they are, virtually; but why, as an absolute proposition, the number to become copied and known? Surely knowing is only one way of interacting with reality and adding to its effect.

The opponent here will ask: "Has not the knowing of truth any substantive value on its own account, apart from the collateral advantages it may bring? And if you allow theoretic satisfactions to exist at all, do they not crowd the collateral satisfactions out of house and home, and must not pragmatism go into bankruptcy, if she admits them at all?" The destructive force of such talk disappears as soon as we use words concretely instead of abstractly, and ask, in our quality of good pragmatists, just what the famous theoretic needs are known as and in what the intellectual satisfactions consist.

Are they not all mere matters of – and emphatically of consistency between an absolute reality and the mind's copies of it, but of actually felt consistency among judgments, objects, and habits of reacting, in the mind's own experienceable world? And are not both our need of such consistency and our pleasure in it conceivable as outcomes of the natural fact that we are beings that do develop mental – habit itself proving adaptively beneficial in an environment where the same objects, or the same kinds of objects, recur and follow 'law'? If this were so, what would have come first would have been the collateral profits of habit as such, and the theoretic life would have grown up in aid of these. In point of fact, this seems to have been the probable case. At life's origin, any present perception may have been 'true' – if such a word could then be applicable. Later, when reactions became organized, the reactions became 'true' whenever expectation was fulfilled by them. Otherwise they were 'false' or 'mistaken' reactions. But the same class of objects needs the same kind of reaction, so the impulse to react consistently must gradually have been established, and a disappointment felt whenever the results frustrated expectation. Here is a perfectly plausible germ for all our higher consistencies. Nowadays, if an object claims from us a reaction of the kind habitually accorded only to the opposite class of objects, our mental

machinery refuses to run smoothly. The situation is intellectually unsatisfactory.

Theoretic truth thus falls the mind, being the accord of some of its processes and objects with other processes and objects – 'accord' consisting here in well-definable relations. So long as the satisfaction of feeling such an accord is denied us, whatever collateral profits may seem to inure from what we believe in are but as dust in the balance – provided always that we are highly organized intellectually, which the majority of us are not. The amount of accord which satisfies most men and women is merely the absence of violent clash between their usual thoughts and statements and the limited sphere of sense-perceptions in which their lives are cast. The theoretic truth that most of us think we 'ought' to attain to is thus the possession of a set of predicates that do not explicitly contradict their subjects. We preserve it as often as not by leaving other predicates and subjects out.

In some men theory is a passion, just as music is in others. The form of inner consistency is pursued far beyond the line at which collateral profits stop. Such men systematize and classify and schematize and make synoptical tables and invent ideal objects for the pure love of unifying. Too often the results, glowing with 'truth' for the inventors, seem pathetically personal and artificial to bystanders. Which is as much as to say that the purely theoretic criterion of truth can leave us in the lurch as easily as any other criterion, and that the absolutists, for all their pretensions, are 'in the same boat' concretely with those whom they attack.

I am well aware that this paper has been rambling in the extreme. But the whole subject is inductive, and sharp logic is hardly yet in order. My great trammel has been the non-existence of any definitely stated alternative on my opponents' part. It may conduce to clearness if I recapitulate, in closing, what I conceive the main points of humanism to be. They are these:

1. An experience, perceptual or conceptual, must conform to reality in order to be true.

2. By 'reality' humanism means nothing more than the other conceptual or perceptual experiences with which a given present experience may find itself in point of fact mixed up.[7]

3. By 'conforming', humanism means taking account-of in such a way as to gain any intellectually and practically satisfactory result.

4. To 'take account-of' and to be 'satisfactory' are terms that admit of no definition, so many are the ways in which these requirements can practically be worked out.

[7] This is meant merely to exclude reality of an 'unknowable' sort, of which no account in either perceptual or conceptual terms can be given. It includes of course any amount of empirical reality independent of the knower. Pragmatism is thus 'epistemologically' realistic in its account.

5. Vaguely and in general, we take account of a reality by it in as unmodified a form as possible. But, to be then satisfactory, it must not contradict other realities outside of it which claim also to be preserved. That we must preserve all the experience we can and minimize contradiction in what we preserve, is about all that can be said in advance.

6. The truth which the conforming experience embodies may be a positive addition to the previous reality, and later judgments may have to conform to *it*. Yet, virtually at least, it may have been true previously. Pragmatically, virtual and actual truth mean the same thing: the possibility of only one answer, *wher*

THE PRAGMATIST ACCOUNT OF TRUTH AND ITS MISUNDERSTANDERS

William James, "The Pragmatist Account of Truth and its Misunderstanders." *The Meaning of Truth* (New York: Longmans, Green, and Co., 1909), chap. 8, pp. 180–216.

The account of truth given in my volume entitled *Pragmatism*, continues to meet with such persistent misunderstanding that I am tempted to make a final brief reply. My ideas may well deserve refutation, but they can get none till they are conceived of in their proper shape. The fantastic character of the current misconceptions shows how unfamiliar is the concrete point of view which pragmatism assumes. Persons who are familiar with a conception move about so easily in it that they understand each other at a hint, and can converse without anxiously attending to their P's and Q's. I have to admit, in view of the results, that we have assumed too ready an intelligence, and consequently in many places used a language too slipshod. We should never have spoken elliptically. The critics have boggled at every word they could boggle at, and refused to take the spirit rather than the letter of our discourse. This seems to show a genuine unfamiliarity in the whole point of view. It also shows, I think, that the second stage of opposition, which has already begun to express itself in the stock phrase that 'what is new is not true, and what is true not new', in pragmatism, is insincere. If we said nothing in any degree new, why was our meaning so desperately hard to catch? The blame, cannot be laid wholly upon our obscurity of speech, for in other subjects we have attained to making ourselves understood. But recriminations are tasteless; and, as far as I personally am concerned, I am sure that some of the misconception I complain of is due to my doctrine of truth being surrounded in that volume of popular lectures by a lot of other opinions not necessarily implicated with it, so that a reader may very naturally have grown confused. For this I am to blame – likewise for omitting certain explicit cautions, which the pages that follow will now in part supply.

First misunderstanding: Pragmatism is only a re-editing of positivism.
This seems the commonest mistake. Scepticism, positivism, and agnosticism agree with ordinary dogmatic rationalism in presupposing that everybody

knows what the word 'truth' means, without further explanation. But the former doctrines then either suggest or declare that real truth, absolute truth, is inaccessible to us, and that we must fain put up with relative or phenomenal truth as its next best substitute. By scepticism this is treated as an unsatisfactory state of affairs, while positivism and agnosticism are cheerful about it, call real truth sour grapes, and consider phenomenal truth quite sufficient for all our 'practical' purposes.

In point of fact, nothing could be farther from all this than what pragmatism has to say of truth. Its thesis is an altogether previous one. It leaves off where these other theories begin, having contented itself with the word truth's *definition*. "No matter whether any mind extant in the universe possess truth or not," it asks, "what does the notion of truth signify *ideally*?" "What kind of things would true judgments be *in case* they existed?" The answer which pragmatism offers is intended to cover the most complete truth that can be conceived of, 'absolute' truth if you like, as well as truth of the most relative and imperfect description. This question of what truth would be like if it did exist, belongs obviously to a purely speculative field of inquiry. It is not a theory about any sort of reality, or about what kind of knowledge is actually possible; it abstracts from particular terms altogether, and defines the nature of a possible relation between two of them.

As Kant's question about synthetic judgments had escaped previous philosophers, so the pragmatist question is not only so subtile as to have escaped attention hitherto, but even so subtile, it would seem, that when openly broached now, dogmatists and sceptics alike fail to apprehend it, and deem the pragmatist to be treating of something wholly different. He insists, they say (I quote an actual critic), "that the greater problems are insoluble by human intelligence, that our need of knowing truly is artificial and illusory, and that our reason, incapable of reaching the foundations of reality, must turn itself exclusively towards *action*." There could not be a worse misapprehension.

Second misunderstanding: Pragmatism is primarily an appeal to action. The name 'pragmatism', with its suggestions of action, has been an unfortunate choice, I have to admit, and has played into the hands of this mistake. But no word could protect the doctrine from critics so blind to the nature of the inquiry that, when Dr. Schiller speaks of ideas 'working' well, the only thing they think of is their immediate workings in the physical environment, their enabling us to make money, or gain some similar 'practical' advantage. Ideas do work thus, of course, immediately or remotely; but they work indefinitely inside of the mental world also. Not crediting us with this rudimentary insight, our critics treat our view as offering itself exclusively to engineers, doctors, financiers, and men of action generally, who need some sort of a

rough and ready *weltanschauung*, but have no time or wit to study genuine philosophy. It is usually described as a characteristically American movement, a sort of bobtailed scheme of thought, excellently fitted for the man on the street, who naturally hates theory and wants cash returns immediately.

It is quite true that, when the refined theoretic question that pragmatism begins with is once answered, secondary corollaries of a practical sort follow. Investigation shows that, in the function called truth, previous realities are not the only independent variables. To a certain extent our ideas, being realities, are also independent variables, and, just as they follow other reality and fit it, so, in a measure, does other reality follow and fit them. When they add themselves to being, they partly redetermine the existent, so that reality as a whole appears incompletely definable unless ideas also are kept account of. This pragmatist doctrine, exhibiting our ideas as complemental factors of reality, throws open (since our ideas are instigators of our action) a wide window upon human action, as well as a wide license to originality in thought. But few things could be sillier than to ignore the prior epistemological edifice in which the window is built, or to talk as if pragmatism began and ended at the window. This, nevertheless, is what our critics do almost without exception. They ignore our primary step and its motive, and make the relation to action, which is our secondary achievement, primary.

Third misunderstanding: Pragmatists cut themselves off from the right to believe in ejective realities.

They do so, according to the critics, by making the truth of our beliefs consist in their verifiability, and their verifiability in the way in which they do work for us. Professor Stout, in his otherwise admirable and hopeful review of Schiller in *Mind* for October, 1907, considers that this ought to lead Schiller (could he sincerely realize the effects of his own doctrine) to the absurd consequence of being unable to believe genuinely in another man's headache, even were the headache there. He can only 'postulate' it for the sake of the working value of the postulate to himself. The postulate guides certain of his acts and leads to advantageous consequences; but the moment he understands fully that the postulate is true *only* (!) in this sense, it ceases (or should cease) to be true for him that the other man really *has* a headache. All that makes the postulate most precious then evaporates: his interest in his fellow-man "becomes a veiled form of self-interest, and his world grows cold, dull, and heartless."

Such an objection makes a curious muddle of the pragmatist's universe of discourse. Within that universe the pragmatist finds some one with a headache or other feeling, and some one else who postulates that feeling. Asking on what condition the postulate is 'true', the pragmatist replies that, for the postulator at any rate, it is true just in proportion as to believe in it works in him

the fuller sum of satisfactions. What is it that is satisfactory here? Surely to *believe* in the postulated object, namely, in the really existing feeling of the other man. But how (especially if the postulator were himself a thoroughgoing pragmatist) could it ever be satisfactory to him *not* to believe in that feeling, so long as, in Professor Stout's words, disbelief "made the world seem to him cold, dull, and heartless"? Disbelief would seem, on pragmatist principles, quite out of the question under such conditions, unless the heartlessness of the world were made probable already on other grounds. And since the belief in the headache, true for the subject assumed in the pragmatist's universe of discourse, is also true for the pragmatist who for his epitemologizing purposes has assumed that entire universe, why is it not true in that universe absolutely? The headache believed in is a reality there, and no extant mind disbelieves it, neither the critic's mind nor his subject's! Have our opponents any better brand of truth in this real universe of ours that they can show us?[1]

So much for the third misunderstanding, which is but one specification of the following still wider one.

Fourth misunderstanding: No pragmatist can be a realist in his epistemology. This is supposed to follow from his statement that the truth of our beliefs consists in general in their giving satisfaction. Of course satisfaction *per se* is a subjective condition; so the conclusion is drawn that truth falls wholly inside

[1] I see here a chance to forestall a criticism which some one may make on Lecture III of my *Pragmatism*, where, on pp. 96–100, I said that 'God' and 'Matter' might be regarded as synonymous terms, so long as no differing future consequences were deducible from the two conceptions. The passage was transcribed from my address at the California Philosophical Union, reprinted in the *Journal of Philosophy*, vol. 1, p. 673. I had no sooner given the address than I perceived a flaw in that part of it; but I have left the passage unaltered ever since, because the flaw did not spoil its illustrative value. The flaw was evident when, as a case analogous to that of a godless universe, I thought of what I called an 'automatic sweetheart', meaning a soulless body which should be absolutely indistinguishable from a spiritually animated maiden, laughing, talking, blushing, nursing us, and performing all feminine offices as tactfully and sweetly as if a soul were in her. Would any one regard her as a full equivalent? Certainly not, and why? Because, framed as we are, our egoism craves above all things inward sympathy and recognition, love and admiration. The outward treatment is valued mainly as an expression, as a manifestation of the accompanying consciousness believed in. Pragmatically, then, belief in the automatic sweetheart would not *work*, and in point of fact no one treats it as a serious hypothesis. The godless universe would be exactly similar. Even if matter could do every outward thing that God does, the idea of it would not work as satisfactorily, because the chief call for a God on modern men's part is for a being who will inwardly recognize them and judge them sympathetically. Matter disappoints this craving of our ego, so God remains for most men the truer hypothesis, and indeed remains so for definite pragmatic reasons.

of the subject, who then may manufacture it at his pleasure. True beliefs become thus wayward affections, severed from all responsibility to other parts of experience.

It is difficult to excuse such a parody of the pragmatist's opinion, ignoring as it does every element but one of his universe of discourse. The terms of which that universe consists positively forbid any non-realistic interpretation of the function of knowledge defined there. The pragmatizing epistemologist posits there a reality and a mind with ideas. What, now, he asks, can make those ideas true of that reality? Ordinary epistemology contents itself with the vague statement that the ideas must 'correspond' or 'agree'; the pragmatist insists on being more concrete, and asks what such 'agreement' may mean in detail. He finds first that the ideas must point to or lead towards *that* reality and no other, and then that the pointings and leadings must yield satisfaction as their result. So far the pragmatist is hardly less abstract than the ordinary slouchy epistemologist; but as he defines himself farther, he grows more concrete. The entire quarrel of the intellectualist with him is over his concreteness, intellectualism contending that the vaguer and more abstract account is here the more profound. The concrete pointing and leading are conceived by the pragmatist to be the work of other portions of the same universe to which the reality and the mind belong, intermediary verifying bits of experience with which the mind at one end, and the reality at the other, are joined. The 'satisfaction', in turn, is no abstract satisfaction *überhaupt*, felt by an unspecified being, but is assumed to consist of such satisfactions (in the plural) as concretely existing men actually do find in their beliefs. As we humans are constituted in point of fact, we find that to believe in other men's minds, in independent physical realities, in past events, in eternal logical relations, is satisfactory. We find hope satisfactory. We often find it satisfactory to cease to doubt. Above all we find *consistency* satisfactory, consistency between the present idea and the entire rest of our mental equipment, including the whole order of our sensations, and that of our intuitions of likeness and difference, and our whole stock of previously acquired truths.

The pragmatist, being himself a man, and imagining in general no contrary lines of truer belief than ours about the 'reality' which he has laid at the base of his epistemological discussion, is willing to treat our satisfactions as possibly really true guides to it, not as guides true solely for *us*. It would seem here to be the duty of his critics to show with some explicitness why, being our subjective feelings, these satisfactions can *not* yield 'objective' truth. The beliefs which they accompany 'posit' the assumed reality, 'correspond' and 'agree' with it, and 'fit' it in perfectly definite and assignable ways, through the sequent trains of thought and action which form their verification, so merely to insist on using these words abstractly instead of concretely is no way of driving the pragmatist from the field – his more concrete account virtually

includes his critic's. If our critics have any definite idea of a truth more objectively grounded than the kind we propose, why do they not show it more articulately? As they stand, they remind one of Hegel's man who wanted 'fruit', but rejected cherries, pears, and grapes, because they were not fruit in the abstract. We offer them the full quart-pot, and they cry for the empty quart-capacity.

But here I think I hear some critic retort as follows: "If satisfactions are all that is needed to make truth, how about the notorious fact that errors are so often satisfactory? And how about the equally notorious fact that certain true beliefs may cause the bitterest dissatisfaction? Isn't it clear that not the satisfaction which it gives, but the relation of the belief *to the reality* is all that makes it true? Suppose there were no such reality, and that the satisfactions yet remained: would they not then effectively work falsehood? Can they consequently be treated distinctively as the truth-builders? It is the *inherent relation to reality* of a belief that gives us that specific *truth*-satisfaction, compared with which all other satisfactions are the hollowest humbug. The satisfaction of *knowing truly* is thus the only one which the pragmatist ought to have considered. As a *psychological sentiment*, the anti-pragmatist gladly concedes it to him, but then only as a concomitant of truth, not as a constituent. What *constitutes* truth is not the sentiment, but the purely logical or objective function of rightly cognizing the reality, and the pragmatist's failure to reduce this function to lower values is patent."

Such anti-pragmatism as this seems to me a tissue of confusion. To begin with, when the pragmatist says 'indispensable', it confounds this with 'sufficient'. The pragmatist calls satisfactions indispensable for truth-building, but I have everywhere called them insufficient unless reality be also incidentally led to. If the reality assumed were cancelled from the pragmatist's universe of discourse, he would straightway give the name of falsehoods to the beliefs remaining, in spite of all their satisfactoriness. For him, as for his critic, there can be no truth if there is nothing to be true about. Ideas are so much flat psychological surface unless some mirrored matter gives them cognitive lustre. This is why as a pragmatist I have so carefully posited 'reality' *ab initio*, and why, throughout my whole discussion, I remain an epistemological realist.[2]

The anti-pragmatist is guilty of the further confusion of imagining that, in undertaking to give him an account of what truth formally means, we are assuming at the same time to provide a warrant for it, trying to define the occasions when he can be sure of materially possessing it. Our making it hinge

[2] I need hardly remind the reader that both sense-percepts and percepts of ideal relation (comparisons, etc.) should be classed among the realities. The bulk of our mental 'stock' consists of truths concerning these terms.

on a reality so 'independent' that when it comes, truth comes, and when it goes, truth goes with it, disappoints this naive expectation, so he deems our description unsatisfactory. I suspect that under this confusion lies the still deeper one of not discriminating sufficiently between the two notions, truth and reality. Realities are not *true*, they *are*; and beliefs are true *of* them. But I suspect that in the anti-pragmatist mind the two notions sometimes swap their attributes. The reality itself, I fear, is treated as if 'true', and conversely. Whoso tells us of the one, it is then supposed, must also be telling us of the other; and a true idea must in a manner *be*, or at least *yield* without extraneous aid, the reality it cognitively is possessed of.

To this absolute-idealistic demand pragmatism simply opposes its *non possumus*. If there is to be truth, it says, both realities and beliefs about them must conspire to make it; but whether there ever is such a thing, or how anyone can be sure that his own beliefs possess it, it never pretends to determine. That truth-satisfaction *par excellence* which may tinge a belief unsatisfactory in other ways, it easily explains as the feeling of consistency with the stock of previous truths, or supposed truths, of which one's whole past experience may have left one in possession.

But are not all pragmatists sure that their own belief is right? their enemies will ask at this point; and this leads me to the

Fifth misunderstanding: What pragmatists say is inconsistent with their saying so.

A correspondent puts this objection as follows: "When you say to your audience, 'pragmatism is the truth concerning truth', the first truth is different from the second. About the first you and they are not to be at odds; you are not giving them liberty to take or leave it according as it works satisfactorily or not for their private uses. Yet the second truth, which ought to describe and include the first, affirms this liberty. Thus the *intent* of your utterance seems to contradict the *content* of it."

General scepticism has always received this same classic refutation. "You have to dogmatize," the rationalists say to the sceptics, "whenever you express the sceptical position; so your lives keep contradicting your thesis." One would suppose that the impotence of so hoary an argument to abate in the slightest degree the amount of general scepticism in the world might have led some rationalists themselves to doubt whether these instantaneous logical refutations are such fatal ways, after all, of killing off live mental attitudes. General scepticism is the live mental attitude of refusing to conclude. It is a permanent torpor of the will, renewing itself in detail towards each successive thesis that offers, and you can no more kill it off by logic than you can kill off obstinacy or practical joking. This is why it is so irritating. Your consistent sceptic never puts his scepticism into a formal proposition – he

simply chooses it as a habit. He provokingly hangs back when he might so easily join us in saying yes, but he is not illogical or stupid – on the contrary, he often impresses us by his intellectual superiority. This is the *real* scepticism that rationalists have to meet, and their logic does not even touch it.

No more can logic kill the pragmatist's behavior: his act of utterance, so far from contradicting, accurately exemplifies the matter which he utters. What is the matter which he utters? In part, it is this, that truth, concretely considered, is an attribute of our beliefs, and that these are attitudes that follow satisfactions. The ideas around which the satisfactions cluster are primarily only hypotheses that challenge or summon a belief to come and take its stand upon them. The pragmatist's idea of truth is just such a challenge. He finds it ultra-satisfactory to accept it, and takes his own stand accordingly. But, being gregarious as they are, men seek to spread their beliefs, to awaken imitation, to infect others. Why should not *you* also find the same belief satisfactory? thinks the pragmatist, and forthwith endeavors to convert you. You and he will then believe similarly; you will hold up your subject-end of a truth, which will be a truth objective and irreversible if the reality holds up the object-end by being itself present simultaneously. What there is of self-contradiction in all this I confess I cannot discover. The pragmatist's conduct in his own case seems to me on the contrary admirably to illustrate his universal formula; and of all epistemologists, he is perhaps the only one who is irreproachably self-consistent.

Sixth misunderstanding: Pragmatism explains not what truth is, but only how it is arrived at.

In point of fact it tells us both, tells us what it is incidentally to telling us how it is arrived at – for what *is* arrived at except just what the truth is? If I tell you how to get to the railroad station, don't I implicitly introduce you to the *what*, to the being and nature of that edifice? It is quite true that the abstract *word* 'how' hasn't the same meaning as the abstract *word* 'what', but in this universe of concrete facts you cannot keep hows and whats asunder. The reasons why I find it satisfactory to believe that any idea is true, the *how* of my arriving at that belief, may be among the very reasons why the idea *is* true in reality. If not, I summon the anti-pragmatist to explain the impossibility articulately.

His trouble seems to me mainly to arise from his fixed inability to understand how a concrete statement can possibly mean as much, or be as valuable, as an abstract one. I said above that the main quarrel between us and our critics was that of concreteness *versus* abstractness. This is the place to develop that point farther.

In the present question, the links of experience sequent upon an idea, which mediate between it and a reality, form and for the pragmatist indeed

are, the *concrete* relation of truth that may obtain between the idea and that reality. They, he says, are all that we mean when we speak of the idea 'pointing' to the reality, 'fitting' it, 'corresponding' with it, or 'agreeing' with it – they or other similar mediating trains of verification. Such mediating events *make* the idea 'true'. The idea itself, if it exists at all, is also a concrete event: so pragmatism insists that truth in the singular is only a collective name for truths in the plural, these consisting always of series of definite events; and that what intellectualism calls *the* truth, the *inherent* truth, of any one such series is only the abstract name for its truthfulness in act, for the fact that the ideas there do lead to the supposed reality in a way that we consider satisfactory.

The pragmatist himself has no objection to abstractions. Elliptically, and 'for short', he relies on them as much as any one, finding upon innumerable occasions that their comparative emptiness makes of them useful substitutes for the overfulness of the facts he meets with. But he never ascribes to them a higher grade of reality. The full reality of a truth for him is always some process of verification, in which the abstract property of connecting ideas with objects truly is workingly embodied. Meanwhile it is endlessly serviceable to be able to talk of properties abstractly and apart from their working, to find them the same in innumerable cases, to take them 'out of time', and to treat of their relations to other similar abstractions. We thus form whole universes of platonic ideas *ante rem*, universes *in posse*, tho none of them exists effectively except *in rebus*. Countless relations obtain there which nobody experiences as obtaining – as, in the eternal universe of musical relations, for example, the notes of Aennchen von Tharau were a lovely melody long ere mortal ears ever heard them. Even so the music of the future sleeps now, to be awakened hereafter. Or, if we take the world of geometrical relations, the thousandth decimal of π sleeps there, tho no one may ever try to compute it. Or, if we take the universe of 'fitting', countless coats 'fit' backs, and countless boots 'fit' feet, on which they are not practically *fitted*; countless stones 'fit' gaps in walls into which no one seeks to fit them actually. In the same way countless opinions 'fit' realities, and countless truths are valid, tho no thinker ever thinks them.

For the anti-pragmatist these prior timeless relations are the presupposition of the concrete ones, and possess the profounder dignity and value. The actual workings of our ideas in verification-processes are as naught in comparison with the 'obtainings' of this discarnate truth within them.

For the pragmatist, on the contrary, all discarnate truth is static, impotent, and relatively spectral, full truth being the truth that energizes and does battle. Can any one suppose that the sleeping quality of truth would ever have been abstracted or have received a name, if truths had remained forever in that storage-vault of essential timeless 'agreements' and had never been embodied in any panting struggle of men's live ideas for verification? Surely no more

than the abstract property of 'fitting' would have received a name, if in our world there had been no backs or feet or gaps in walls to be actually fitted. *Existential* truth is incidental to the actual competition of opinions. *Essential* truth, the truth of the intellectualists, the truth with no one thinking it, is like the coat that fits tho no one has ever tried it on, like the music that no ear has listened to. It is less real, not more real, than the verified article; and to attribute a superior degree of glory to it seems little more than a piece of perverse abstraction-worship. As well might a pencil insist that the outline is the essential thing in all pictorial representation, and chide the paint-brush and the camera for omitting it, forgetting that *their* pictures not only contain the whole outline, but a hundred other things in addition. Pragmatist truth contains the whole of intellectualist truth and a hundred other things in addition. Intellectualist truth is then only pragmatist truth *in posse*. That on innumerable occasions men do substitute truth *in posse* or verifiability, for verification or truth in act, is a fact to which no one attributes more importance than the pragmatist: he emphasizes the practical utility of such a habit. But he does not on that account consider truth *in posse* – truth not alive enough ever to have been asserted or questioned or contradicted – to be the metaphysically prior thing, to which truths in act are tributary and subsidiary. When intellectualists do this, pragmatism charges them with inverting the real relation. Truth *in posse means* only truths in act; and he insists that these latter take precedence in the order of logic as well as in that of being.

Seventh misunderstanding: Pragmatism ignores the theoretic interest.
This would seem to be an absolutely wanton slander, were not a certain excuse to be found in the linguistic affinities of the word 'pragmatism', and in certain offhand habits of speech of ours which assumed too great a generosity on our reader's part. When we spoke of the meaning of ideas consisting in their 'practical' consequences, or of the 'practical' differences which our beliefs make to us; when we said that the truth of a belief consists in its 'working' value, etc.; our language evidently was too careless, for by 'practical' we were almost unanimously held to mean *opposed* to theoretical or genuinely cognitive, and the consequence was punctually drawn that a truth in our eyes could have no relation to any independent reality, or to any other truth, or to anything whatever but the acts which we might ground on it or the satisfactions they might bring. The mere existence of the idea, all by itself, if only its results were satisfactory, would give full truth to it, it was charged, in our absurd pragmatist epistemology. The solemn attribution of this rubbish to us was also encouraged by two other circumstances. First, ideas *are* practically useful in the narrow sense, false ideas sometimes, but most often ideas which we can verify by the sum total of all their leadings, and the reality of whose objects may thus be considered established beyond doubt.

That these ideas should be true in advance of and apart from their utility, that, in other words, their objects should be really there, is the very condition of their having that kind of utility – the objects they connect us with are so important that the ideas which serve as the objects' substitutes grow important also. This manner of their practical working was the first thing that made truths good in the eyes of primitive men; and buried among all the other good workings by which true beliefs are characterized, this kind of subsequential utility remains.

The second misleading circumstance was the emphasis laid by Schiller and Dewey on the fact that, unless a truth be relevant to the mind's momentary predicament, unless it be germane to the 'practical' situation – meaning by this the quite particular perplexity – it is no good to urge it. It doesn't meet our interests any better than a falsehood would under the same circumstances. But why our predicaments and perplexities might not be theoretical here as well as narrowly practical, I wish that our critics would explain. They simply assume that no pragmatist *can* admit a genuinely theoretic interest. Having used the phrase 'cash-value' of an idea, I am implored by one correspondent to alter it, "for every one thinks you mean only pecuniary profit and loss." Having said that the true is 'the expedient in our thinking', I am rebuked in this wise by another learned correspondent: "The word expedient has no other meaning than that of self-interest. The pursuit of this has ended by landing a number of officers of national banks in penitentiaries. A philosophy that leads to such results must be unsound."

But the word 'practical' is so habitually loosely used that more indulgence might have been expected. When one says that a sick man has now practically recovered, or that an enterprise has practically failed, one usually means just the opposite of practically in the literal sense. One means that, altho untrue in strict practice, what one says is true in theory, true virtually, *certain to be* true. Again, by the practical one often means the distinctively concrete, the individual, particular, and effective, as opposed to the abstract, general, and inert. To speak for myself, whenever I have emphasized the practical nature of truth, this is mainly what has been in my mind. 'Pragmata' are things in their plurality; and in that early California address, when I described pragmatism as holding that "the meaning of any proposition can always be brought down to some particular consequence in our future practical experience, whether passive or active," I expressly added these qualifying words: "the point lying rather in the fact that the experience must be particular than in the fact that it must be active" – by 'active' meaning here 'practical' in the narrow literal sense.[3] But particular consequences can perfectly well be

[3] The ambiguity of the word 'practical' comes out well in these words of a recent would-be reporter of our views: "Pragmatism is an Anglo-Saxon reaction against the intellectualism and rationalism of the Latin mind.... Man, each individual man is the measure

of a theoretic nature. Every remote fact which we infer from an idea is a particular theoretic consequence which our mind practically works towards. The loss of every old opinion of ours which we see that we shall have to give up if a new opinion be true, is a particular theoretic as well as a particular practical consequence. After man's interest in breathing freely, the greatest of all his interests (because it never fluctuates or remits, as most of his physical interests do), is his interest in *consistency*, in feeling that what he now thinks goes with what he thinks on other occasions. We tirelessly compare truth with truth for this sole purpose. Is the present candidate for belief perhaps contradicted by principle number one? Is it compatible with fact number two? and so forth. The particular operations here are the purely logical ones of analysis, deduction, comparison, etc.; and altho general terms may be used *ad libitum*, the satisfactory *practical working* of the candidate-idea consists in the consciousness yielded by each successive theoretic consequence in particular. It is therefore simply idiotic to repeat that pragmatism takes no account of purely theoretic interests. All it insists on is that verity in act means *verifications*, and that these are always particulars. Even in exclusively theoretic matters, it insists that vagueness and generality serve to verify nothing.

Eighth misunderstanding: Pragmatism is shut up to solipsism.
I have already said something about this misconception under the third and fourth heads, above, but a little more may be helpful. The objection is apt to clothe itself in words like these: "You make truth to consist in every value except the cognitive value proper; you always leave your knower at many removes (or, at the uttermost, at one remove) from his real object; the best you do is to let his ideas carry him towards it; it remains forever outside of him," etc.

I think that the leaven working here is the rooted intellectualist persuasion that, to know a reality, an idea must in some inscrutable fashion possess or be it.[4] For pragmatism this kind of coalescence is inessential. As a rule our cognitions are only processes of mind off their balance and in motion towards

of things. He is able to conceive none but relative truths, that is to say, illusions. What these illusions are worth is revealed to him, not by general theory, but by individual practice. Pragmatism, which consists in experiencing these illusions of the mind and obeying them by acting them out, is a *philosophy without words*, a philosophy of *gestures and of acts*, which abandons what is general and holds only to what is *particular*." (Bourdeau, in *Journal des Débats*, October 29, 1907.)

[4] Sensations may, indeed, possess their objects or coalesce with them, as common sense supposes that they do; and intuited differences between concepts may coalesce with the 'eternal' objective differences; but to simplify our discussion here we can afford to abstract from these very special cases of knowing.

real termini; and the reality of the termini, believed in by the states of mind in question, can be *guaranteed* only by some wider knower.[5] But if there is no reason extant in the universe why they should be doubted, the beliefs are true in the only sense in which anything can be true anyhow: they are practically and concretely true, namely. True in the mystical mongrel sense of an *identitätsphilosophie* they need not be; nor is there any intelligible reason why they ever need be true otherwise than verifiably and practically. It is reality's part to possess its own existence; it is thought's part to get into 'touch' with it by innumerable paths of verification.

I fear that the 'humanistic' developments of pragmatism may cause a certain difficulty here. We get at one truth only through the rest of truth; and the reality, everlastingly postulated as that which all our truth must keep in touch with, may never be given to us save in the form of truth other than that which we are now testing. But since Dr. Schiller has shown that all our truths, even the most elemental, are affected by race-inheritance with a human coefficient, reality *per se* thus may appear only as a sort of limit; it may be held to shrivel to the mere *place* for an object, and what is known may be held to be only matter of our psyche that we fill the place with.

It must be confessed that pragmatism, worked in this humanistic way, is *compatible* with solipsism. It joins friendly hands with the agnostic part of Kantism, with contemporary agnosticism, and with idealism generally. But worked thus, it is a metaphysical theory about the matter of reality, and flies far beyond pragmatism's own modest analysis of the nature of the knowing function, which analysis may just as harmoniously be combined with less humanistic accounts of reality. One of pragmatism's merits is that it is so purely epistemological. It must assume realities; but it prejudges nothing as to their constitution, and the most diverse metaphysics can use it as their foundation. It certainly has no special affinity with solipsism.

As I look back over what I have written, much of it gives me a queer impression, as if the obvious were set forth so condescendingly that readers might well laugh at my pomposity. It may be, however, that concreteness as

[5] The transcendental idealist thinks that, in some inexplicable way, the finite states of mind are identical with the transfinite all-knower which he finds himself obliged to postulate in order to supply a *fundamentum* for the relation of knowing, as he apprehends it. Pragmatists can leave the question of identity open; but they cannot do without the wider knower any more than they can do without the reality, if they want to *prove* a case of knowing. They themselves play the part of the absolute knower for the universe of discourse which serves them as material for epistemologizing. They warrant the reality there, and the subject's true knowledge, there, of it. But whether what they themselves say about that whole universe is objectively true, *i.e.*, whether the pragmatic theory of truth is true *really*, they cannot warrant – they can only believe it. To their hearers they can only *propose* it, as I propose it to my readers, as something to be verified *ambulando*, or by the way in which its consequences may confirm it.

radical as ours is not so obvious. The whole originality of pragmatism, the whole point in it, is its use of the concrete way of seeing. It begins with concreteness, and returns and ends with it. Dr. Schiller, with his two 'practical' aspects of truth, (1) relevancy to situation, and (2) subsequential utility, is only filling the cup of concreteness to the brim for us. Once seize that cup, and you cannot misunderstand pragmatism. It seems as if the power of imagining the world concretely *might* have been common enough to let our readers apprehend us better, as if they might have read between our lines, and, in spite of all our infelicities of expression, guessed a little more correctly what our thought was. But alas! this was not on fate's programme, so we can only think, with the german ditty:

> "Es wär' zu schön gewesen,
> Es hat nicht sollen sein."

THE MEANING OF THE WORD TRUTH

William James, "The Meaning of the Word Truth." (New York: Longmans, Green, and Co., 1909), chap. 9, pp. 217–220.

My account of truth is realistic, and follows the epistemological dualism of common sense. Suppose I say to you "The thing exists" – is that true or not? How can you tell? Not till my statement has developed its meaning farther is it determined as being true, false, or irrelevant to reality altogether. But if now you ask "what thing?" and I reply "a desk"; if you ask "where?" and I point to a place; if you ask "does it exist materially, or only in imagination?" and I say "materially"; if moreover I say "I mean that desk," and then grasp and shake a desk which you see just as I have described it, you are willing to call my statement true. But you and I are commutable here; we can exchange places; and, as you go bail for my desk, so I can go bail for yours.

This notion of a reality independent of either of us, taken from ordinary social experience, lies at the base of the pragmatist definition of truth. With some such reality any statement, in order to be counted true, must agree. Pragmatism defines 'agreeing' to mean certain ways of 'working', be they actual or potential. Thus, for my statement "the desk exists" to be true of a desk recognized as real by you, it must be able to lead me to shake your desk, to explain myself by words that suggest that desk to your mind, to make a drawing that is like the desk you see, etc. Only in such ways as this is there sense in saying it agrees with *that* reality, only thus does it gain for me the satisfaction of hearing you corroborate me. Reference then to something determinate, and some sort of adaptation to it worthy of the name of agreement, are thus constituent elements in the definition of any statement of mine as 'true'.

You cannot get at either the reference or the adaptation without using the notion of the workings. *That* the thing is, *what* it is, and *which* it is (of all the possible things with that what) are points determinable only by the pragmatic method. The 'which' means a possibility of pointing, or of otherwise singling out the special object; the 'what' means choice on our part of an essential aspect to conceive it by (and this is always relative to what Dewey calls our own 'situation'); and the 'that' means our assumption of the attitude of belief, the reality recognizing attitude. Surely for understanding what the word 'true' means as applied to a statement, the mention of such workings is indispensable. Surely if we leave them out the subject and the object of the

cognitive relation float – in the same universe, 'tis true – but vaguely and ignorantly and without mutual contact or mediation.

Our critics nevertheless call the workings inessential. No functional possibilities 'make' our beliefs true, they say; they are true inherently, true positively, born 'true' as the Count of Chambord was born 'Henri-Cinq'. Pragmatism insists, on the contrary, that statements and beliefs are thus inertly and statically true only by courtesy: they practically pass for true; but you *cannot define what you mean* by calling them true without referring to their functional possibilities. These give its whole *logical content* to that relation to reality on a belief's part to which the name 'truth' is applied, a relation which otherwise remains one of mere coexistence or bare withness.

The foregoing statements reproduce the essential content of the lecture on Truth in my book *Pragmatism*. Schiller's doctrine of 'humanism', Dewey's *Studies in Logical Theory*, and my own 'radical empiricism', all involve this general notion of truth as 'working', either actual or conceivable. But they envelope it as only one detail in the midst of much wider theories that aim eventually at determining the notion of what 'reality' at large is in its ultimate nature and constitution.

Section Two

Memorials and Remembrances of James

WILLIAM JAMES

Horace M. Kallen. "William James." *The Nation* 91.10 (8 September 1910): 210–211.

In William James, America loses her one philosopher whose work is studied in France and China, in Finland and Australia, wherever men are seriously concerned about human nature and human destiny. What chiefly characterizes his thought is that rarest of all qualities, intellectual justice. He was utterly free from extremes, whether of aspiration or of argument. People have been used to call this quality a defect in logical power, and to accuse him of inconsistency, but, in truth, the inconsistency is not that of the thinker, but that of the world which he interpreted; the defect was not in his reasoning, but in the universe which he reasoned about. He could be subtle and dialectical enough when the occasion required it, as any reader of his latest book, "The Meaning of Truth," can testify. But he had a great dislike of dialectic and logic-chopping. He was a philosopher, not a professor of philosophy. What he cared for deeply and what was strongest in his own nature was the capacity for that direct, immediate intuition into the character of reality, which is the foundation for all dialectic and the criterion of all logical operations. This intuition, this justness of vision was so perfect in him that he could place himself, at a bound, at the very heart of even an opponent's thought, and see it with such a degree of sympathy as to hurt his own cause. He was always trying to save as much of the other man's values as he could. He set himself at the centre and drew all extremes in toward him. One of the many ways in which he indicated the nature of Pragmatism was to call it a mediator.

And a mediator Pragmatism is. It springs directly from that power of sympathetic comprehension and adequacy of intuition which were the whole nature of William James. Among philosophers who have found a place in the history of philosophy, there are hardly any, if we except Spinoza, whose philosophy and life were so absolutely at one. And that is perhaps the secret of the limpid, persuasive English, its arresting freshness, its thought-provoking power, which we have learned to know as the style of William James. In his case, the style was certainly the man, and the man the insight.

This insight is an insight into the basis and value of life. It apprehends experience as a flux and thought as a mediation. It is a mediation between the spirit and its environment, and for James himself had become, as Pragmatism, a mediation between fate and faith, between the march of things

and the impulsion of ideas, between the will of nature and the will of man, between science and religion. There are two forces which impel men to philosophy. One is the inner impulse, the hopes and ideals of which the essence of human nature is woven. If operating without reference to the other, it creates a world in which all the values of our existence are conserved, but which does not describe the world in which mankind must and does seek its livelihood at the hazard of its life. This is the world envisaged in most religions and idealisms. They conserve values, but belie nature; they are optimistic and always have a problem of evil to face. The other force which impels men to philosophy is the shock from without, the massing upon life of the forces of nature which demand to be defined and understood if life is to maintain itself among them. This comprehension and definition is science. It envisages the environment without making it amenable to the ideal. It gets at nature by losing sight of human nature. In the case of idealism aspiration goes off into a limbo of its own without considering its conditions; in the case of naturalism, the flux sweeps on its irrevocable way unmindful of life or its interests. Each of these visions is inwardly coherent, logically consistent; neither is correct. The world is neither purely mechanical nor purely spiritual. It contains clashings of purposes and events, it contains purposes and events that harmonize. Ideals and ideas, William James insists again and again, must not be irrelevant to the conditions of their fulfilment, they are not aliens in a strange world, they have more than a squatter's claim in it. They, too, have a share in making it over and the existence of desire may be one of the conditions of the existence of its satisfaction; the will to believe may be one of the conditions for the coming of its object. Ideas and ideals also are factors in the universal struggle for survival. They, too, have a role to play in the flux, and they become valid and true only as they play that role fitly. But because they play a role, they must not be mistaken, as they are by idealisms and religions, for the sole protagonists in the cosmic drama. That "precipitousness," that certain menace and danger which we find in existence, springs from no ideal or spirit. There is a residual environment where God himself must battle for the good as he knows the good, an environment which is the condition of the good's existence and in which it must be sought. Ideas must be relevant if they are to work; relevancy, appropriateness, fitness, is the condition of all excellence. Reason itself is no more than the sentiment of this relevancy, this adequacy of articulation in the onrush of reality.

From this central vision springs every particular achievement of William James. The "functional viewpoint" in psychology, through which Professor Dewey and others have done so much, and which is to-day the most widespread among psychologists, originates in this vision, for it is from James's treatment of the concept that the "functional viewpoint" derives. And his treatment of the concept itself derives from the radical empiricism which envisages the intimate and interchangeable connections between ideas and

things. This envisagement is still more evident in James's philosophy of religion. If divinity is to be known in its true nature at all, it must be known directly, in an immediate experience, which is only more mystical than the immediate experience of chairs and tables and men and the commoner aspects of nature, in the fact that it is rarer, not in the fact that it is different. The idea of God must be effective in an environment which has God for an object. To know him is to meet him under appropriate conditions face to face; to know him is as much an act of perception as to know any other fellow-being. For God is no more than a fellow-being, a very precious one, a conserver of our values who is engaged with us on our side in the struggle for life against the enmities that surround it, but still a fellow-being only, also enlisted in the great war for the good. And that supremest good, life itself, which discourse represents as the belief in immortality, that also must be sought and justified under appropriate conditions. Those conditions occur wherever the life after death seems to manifest itself, and they must be taken for what they are worth, tested to the limit for the validity, the fitness of the belief in immortality to survive. There is no more than this in William James's attitude toward psychical research. Sensation-mongers have made capital of the wide and just sympathy which ever led James to pursue the truth wherever it seemed to show its face. They have wronged him without reason, and sometimes with malice. Nowhere in his printed utterances on the subject of psychical research can be found anything more than just this readiness to test and examine, to consider and to weigh alternatives, just his righteous indignation at casting aside without a hearing whatever data are offered for the validation of a claim, the satisfaction of an interest, or the realization of an ideal. What moved him in all this was the love of man working through the spirit and with the methods of science. He insisted on giving human aspiration a fair trial.

Giving men and things a fair trial was the whole of William James's life. His sense of justice it was that made him an empiricist and libertarian in metaphysics and a meliorist in ethics. For him change was real, and nothing was so bad that it might not be improved. His own life was an expression of this conviction. For many years under the malignant influence of a grave and baffling disease, he carried out his appointed tasks with unflinching constancy and invincible will. He had, moreover, an extraordinary and infectious joyousness, a sort of youthful buoyancy, which seemed woven into the warp and woof of his philosophic vision as well as into the routine of his daily life. He touched nothing but to illuminate it; a subject in his hands soon began to sparkle and shine, to cast rays in infinite directions on infinite things. He always imparted to his pupils and hearers the feeling of the "something beyond," the "and" which trails after. He gave himself freely to all things; there was not a single humane cause in which he had not a part.

WILLIAM JAMES

Giovanni Papini. "William James." *La Voce* 2 (8 September 1910): 391.

È morto William James.
Non posso piangere ma neppur dimenticare.

Mi fu maestro da lontano parecchi anni e negli ultimi tempi quasi amico – mio *fellow*, come egli diceva. Per quanto m'industri e mi studi, non so ritagliare la sua figura di pensatore dalla storia del mio pensiero e non son capace, almeno in questo momento, di giudicarlo come staccato da me, come pura material di narrazione e di giudizio.

Per un certo verso questo mio vanitoso egocentrismo è giustificato. La personalità del James era gran parte della sua fortuna. Il suo *stile* (non in senso soltanto letterario), il suo particular modo di esporre le cose, di ripresentarle a nuovo, di vivificarle, di farle comprendere in un altro senso, entrava per dimolto nella sua fortuna e nella sua influenza. I filosofi codini l'accusavano di scriver troppo bene, d'essere un letterato, un prezioso, un giacobino, ma non si accorgevano che quello scriver bene, quell'insinuarsi coll'immagine e la terminologia nuova nella mente e nella fantasia dei lettori e degli ascoltatori, faceva parte della sua filosofia, era una conseguenza della sua particolar maniera d'intendere le teorie, cioè non come rigide catapulte invincibili, pronte a scagliare le pesanti verità sulla testa dei ribelli, ma come amiche discrete e affettuose, che parlano all'orecchio nei lunghi crepuscoli d' inverno, e ci consolano il cuore e scoppiettan di spirito come i ceppi tra gli alari, e ci danno una mano, quando sia il caso, a sopportar le fatiche e le angustie della vita – mutevoli, plastiche, duttili, servizievoli e amorose come donne vere.

Fin da quando, nel 1900, io leggevo i primi fascicoli dei *Principi di Psicologia*, su per i rami di un albero, assieme a L. E. Morselli, il James m'è sempre piaciuto per quella sua cordialità intellettuale, per quella profonda facoltà di simpatia che senti in lui anche quando parla di cose esatte e ipotetiche. Si sente nei suoi libri l'uomo che non pensa sempre profondamente ma pensa volentieri, di buon umore, e col sorriso in bocca di chi s'aspetta di far piacere anche agli altri, di aiutarli, di incoraggiarli, di rintonarli, e rinforzarli. Eppoi fa impressione la sua finezza di osservatore che fugge il geometrico e il crudamente illuminato e s'ingegna di riprodurre, come una macchina delicate, la sfumatura e la penombra: non viene in mente a tutti la sua teoria della « frangia della coscienza »?

Fu anche paradossale (bisogna sempre adoprare questa sciocca parola) e piacque anche per quello. La sua teoria delle emozioni – esempio classico di originalità per rovesciamento – fu quella che gli aperse le porte di alcune nazioni, (non si piange perchè siamo addolorati; ma ci sentiamo tristi perchè si piange). E negli ultimi tempi, nei suoi libri sul *Pragmatismo* il paradosso, o la forma paradossale spiritosa e ingegnosa di dir le cose, ogni tanto scappava fuori a risuscitare le lunghe pagine insistenti o leggere. La stessa teoria sua della *will to believe* non ha forse tutta la struttura di un paradosso? (Non si deve creder ciò perchè è vero, – diventerà vero quel che crediamo).

Si capisce che agli occhi dei filosofi seri e ortodossi, che pretendono d'avere fra le mani il codice di procedura del pensiero e scambiano a volte per profondità il moto e per serietà la pedanteria e per sistema la simmetria delle false finestre e per sana tradizione la paura di lasciar le strade maestre, il James è apparso poco meno che un dilettante presuntuoso, degno d'esser colpito dalla scomunica maggiore. Uno spirito eracliteo, che odiava le formule secche e definite come il fumo agli occhi, amante innamorato della volubile corrente del pensiero, preoccupato continuamente delle ragioni morali e sentimentali degli uomini e de' bisogni religiosi della sua razza, non poteva piacere e non doveva pioacere a quelli che cercano la verità e nient'altro che la pura e nuda verità, anche se a volte la trovano morta stecchita nelle fascie degli antichi teoremi o se anche la sperdono correndo dietro a una stregante idea fissa.

Mi ricordo che la prima volta che ho visto il James, a Roma, in un albergo vicino a Porta del Popolo, era in maniche di camicia. Potrei dire, seguendo un po' il suo metodo pittoresco di designare le teorie, che la sua era una filosofia fatta in maniche di camicia, alla buona, senza cerimonie, senza acconciature e apparati. Uno dei suoi libri è sottointitolato « Saggi di filosofia popolare » ma tutti quanti potrebbero esser chiamati cosi. Egli ha svestito la filosofia; l'ha presentata senza la giacchetta dell'ordine paragrafato, senza il soprabito della terminologia tecnica e senza l'alta e nera tuba della profondità. L'ha messa alla portata di tutti, l'ha accostata alla vita quotidiana, l'ha rimessa in relazione coi più elementari interessi dell'esistenza, l'ha fatta apparire generosa, cordiale e alla mano come era lui – non come un'astrologia al servizio di pochi settari ma come cibo e vita delle moltitudini.

A volte facendo della filosofia popolare, semplice chiara e spiritosa, si dicon cose stravecchie o superficiali o false o insignificanti. Ma succede pure che si dicano cose più profonde di quelle dei professori di profondità e cose più nuove dei minatori di novità. Però la limpidezza nasconde a volte come il buio: il veder quelle idée esposte con tanta semplicità e agilità e naturalezza in mezzo ad alter che son notissime o cattive dà l'idea che anche loro sian del medesimo stampo e il lettore non si sofferma e i competenti non le

rilevano. Eppure dal disordine e dall'improvvisazione esce talvolta l'abbondanza e nell'abbondanza sprizzano fuori scintile e fiamme che non sarebbero venute a splendere e a bruciare se tutto fosse andato per le solite strade diritte e coperte di savia cenere.

*

Questa non è una necrologia in regola: me ne accorgo anch'io.

Ma gli italiani studiosi (che in questo caso sono i soli che contano) non hanno proprio bisogno di una bibliografia degli scritti di James. L'Italia, per dir il vero, ha scoperto e amato James più e prima degli altri paesi. La prima traduzione della *Psicologia* è stata quella fatta da G. C. Ferrari e da M. Calderoni e in italiano si trovan tradotti i *Discorsi ai Maestri*, la *Coscienza Religiosa* e, per quanto non ancora pubblicati, i saggi che prendon il titolo dalla *Volontà di credere* e alcuni altri che usciranno fra breve a mia cura.

L'attività filosofica del James si può dividere facilmente in tre momenti: quello primo, psicologico, che ha dato alla scienza due o tre vedute nuove e un bellissimo libro – il secondo, religioso, con la celebre opera che ha risvegliato, anche fra noi, gli studi di psicologia della religione (per quanto prevalentemente documentaria e unliaterale come provenienza d'informazioni) – e il terzo che si può dir metodologico o pragmatistico rivolto a stabilire cosa sia la filosofia e la verità, con tentativi e aspirazioni di una metafisica empiristica.

A proposito: come parlare di James senza paralre di pragmatismo? Da quando, nel 1904, il *Leonardo* cominciò a diffondere e ad elaborare il pragmatismo anglosassone, il nome del James in Italia, e dopo anche fuori, fu congiunto a quello di pragmatismo e il mio nome fu congiunto al suo tanto che ora, anche nei telegrammi dei quotidiani, il mio modesto casato è apparso accanto a quello del morto americano. A me la morte del James, oltre che per utto il resto, è dispiaciuto anche perchè non ho avuto il tempo e l'occasione di spiegarmi con lui a proposito di questo benedetto pragmatismo. Quattro o cinque anni fa io avevo promesso di scrivere un libro sul pragmatismo e ne avevo già scritti diversi capitoli quando il James l'annunziò ai lettori di un suo volume. Ma lavorandoci attorno e cercando di chiarire e di approfondire per me e per gli altri, le mie idee in parte mutarono ed io non scrissi più quel libro. Aspettavo di rivedere il James per spiegarmi con lui e presentargli le mie nuove vedute, contrarie recisamente al suo utilitarismo conoscitivo. Non m'è riuscito: la morte ha impedito la sua nuova venuta in Europa. Volevo precisare le mie idee con lui e per lui contavo sul congresso di Bologna. Molti hanno aspettato quel mio libro sul pragmatismo, molti son curiosi di sapere qual sia la mia presente attitudine rispetto ad esso, cioè in fondo rispetto al James. Qui non ho ormai più tempo e più spazio per spiegarmi liberamente. Dirò soltanto questo: io accetto ancora il pragmatismo cosi detto logico e conoscitivo,

quello del Peirce perfezionato e sistemato in Italia dall'indimenticabile Vailati e dal suo discepolo Mario Calderoni. Però questo pragmatismo della prima maniera nel James appar solo di sfuggita e non sotto forma rigorosa.

Quanto all'altro pragmatismo, a quello che tenta di stabilire un concetto della verità, fondato non sulle conseguenze sensibili o logiche ma sentimentali o utili in senso volgare o materiale, cioè un concetto della verità come qualcosa di servibile e utilizzabile e sottoposto ai bisogni della vita religiosa e morale, io sono assolutamente contrario e credo che lo scopo vero della filosofia sia quel di riconoscere questo carattere utilitario nelle scienze e anche in molte teorie filosofiche passate, ma nello stesso tempo di purgarsi interamente da questo utilitarismo implicito ed esplicito per giungere a una conoscenza pura e disinteressata, sia coll'intuizione, sia col concetto, sia con quel che volete, ma che non sottometta la ricerca della verità veramente vera ai pretesi bisogni dello spirito e alle necessità sociali o alle tradizioni religiose. Verità avanti tutto e sopra tutto – anche se la verità dovesse farci scoprire l' inutilità di sè stessa e dell'universo, e la vanità degli sforzi umani, e la desolazione e il vuoto della vita e l'impossibilità di arrivare a costruzioni che soddisfacciano e contentino la nostra mente e i nostri interessi.

La filosifa, insomma, dev'essere istradamento a una disperazione rassegnata, a una vita eroica, senza speranze di compensi di premi o di consolazioni e perciò dura e fortificante e adatta per uomini veri e non per femminuccie cinguettanti. Il James invece cedette ai bisogni degli uomini, fu indulgente alle aspirazioni de' cuori, s'inchinò dinanzi all'animalesco ultitarismo che dapertutto s'appiatta, anche in quelle che paiono le forme più alte della vita dello spirito, e fu la sua debolezza e la sua colpa. Questa non farà dimenticare la genialità di alcune sue intuizioni e la sua passione quasi religiosa per certi ideali, ma giustificherà il desiderio di una filosofia più indipendente, più eroica e più virile.

WILLIAM JAMES

John Dewey. "William James." *Journal of Philosophy, Psychology and Scientific Methods* 7.19 (15 September 1910): 505–508.

In responding to the request of the editors to write a few words regarding the late William James, I find myself without any of his books at hand. In any case, an adequate estimate of his philosophy could hardly be made at this time. Those who have been associated with him for many years can alone contribute to the story of his intellectual development – a fascinating topic, I imagine. Those who have studied under him will tell the tale of his teaching. While I have been honored with his friendship for many years, circumstances forbade intimacy, and I am not fitted to speak fitting words of his personality. Of William James neither as philosopher nor as man shall I, then, attempt to write, but will attempt some scattered and hurried impressions of what falls between.

The following bare facts, gleaned in part from the public press, are given as matter of record. He was born in New York City, January 11, 1842, being a little more than a year older than his brother, Henry. He must have come naturally by his psychological and metaphysical bent, for the writings of his father are acute and subtle. Many will recall the delightful introduction to some of them with which William James prefaced an edition of the *Literary Remains* of his father. In a daily paper, it is stated that James Russell Lowell called Henry James, Sr., the "best talker in America." The younger James's early education was somewhat scattering, a fact that perhaps had some bearing upon his freely expressed aversion to the over-regimentation of our American college education. Even Harvard he thought too conventional – especially in its unwillingness to make professors of men who would not work well in harness.

His special training was scientific, not literary, being had at the Lawrence Scientific School, upon an Agassiz expedition, and finally at the Harvard Medical School, where he graduated in 1870. Classicists can doubtless explain how it happened that a man of such exquisite literary sense was the product of a scientific training. The student of his works notes both that his psychological career grew naturally out of his physiological interests (he was a teacher of physiology in the Harvard Medical School from 1872 to 1880), and that he was moved to strong reaction against the dogmatic attitude of many scientific men of that time. Chauncey Wright, I suppose, was one of the

profoundest intellectual influences of his life – but in the reverse direction. In 1878 he married Miss Alice Gibbons, who, with four children, survives him. From 1880 till his retirement in 1907 he was on the Harvard staff as teacher of philosophy or psychology, one or both. That his work was recognized in Europe as well as in this country is witnessed in his honorary degrees from Italy, Switzerland, and England, and his membership in the academy of almost every European country. By common consent he was far and away the greatest of American psychologists – it was a case of James first and no second. Were it not for the unreasoned admiration of men and things German, there would be no question, I think, that he was the greatest psychologist of his time in any country – perhaps of any time. The division of philosophy into schools affects the judging of philosophers, but those of the most opposite schools will cordially acknowledge that Mr. James has been one of the few vital and fruitful factors in contemporary thought.

Everyone, I suppose, would cite his sense of reality as Mr. James's foremost trait. I would not say that philosophers as a class are lacking in this trait, but the business of philosophy is to generalize and to systematize; and philosophers are under a greater temptation than others to follow the bent of their own leading principles, to fill in missing considerations and to overlook contrary indications. Mr. James was extraordinarily free from this defect. He saw things in the varied aspects which they have by nature, and was content to report them as he saw them.

The saying, commoner a few years ago than now, but still frequently heard, that Mr. James contradicted himself too much for a philosopher and that he lacked the power of systematic reflection, was in fact a tribute to the sincerity and scope of Mr. James's vision and reporting. As matter of fact, the various portions of Mr. James's "radical empiricism" hang together – in my judgment – in a way indicative of good technical workmanship, but he took things as he found them, and if things were not simple, or consistent, or systematized, his philosophy did not consist in forcing system upon them. In this sense only do I find his thought unsystematic.

In any case, Mr. James has added a precious gift to American philosophic thought. However much or however little it may follow in the path that Mr. James struck out, his influence has made it more hospitable to fact, more sensitive to the complex difficulties of situations, less complacently content with merely schematic unities. One of the defects that troubled Mr. James in the writings of many of the younger philosophers in America, a certain crabbedness and obscurity of style, is, I think, in some degree traceable to this very influence. It is comparatively easy to appear clear when engaged in expounding second-hand ideas or expatiating upon some convention of literary tradition. Groping in unexplored fields after considerations that are themselves obscure lends itself to clear writing only when it coincides with such lucid vision and constructive artistry as Mr. James himself possessed.

This brings me to what I should name as the second of Mr. James's gifts – his power of literary expression. This power strikes both the layman and the professional philosopher, and strikes them at first glance. I shall not be so stupid as to enlarge upon it, and, not being a literary critic, I shall not attempt to describe it. But it is pertinent to remark that in Mr. James's case not only was the style very much of the man, but it was also of the essence of his vision and of his thought. The picturesqueness of reference, the brilliant accuracy of characterization, by which he has enriched philosophic literature, were a part of his sense for the concrete, and for the varied aspects of the world. He was not a philosopher who by taking pains acquired a literary gift; he was an artist who gave philosophic expression to the artist's sense of the unique, and to his love of the individual. It is no accident that the note which sounds through his last systematic work, *A Pluralistic Universe*, is "vision." Akin to the objection that Mr. James was not systematic enough for a philosopher, was the remark that he was more of a literary man than a philosopher – a remark sometimes uttered by those who did not like Mr. James's unprofessional short-cuts to results. The late Dr. W. T. Harris, by temperament and training at the opposite pole of philosophy, did not share this superficial opinion. I recall hearing him say that Mr. James's artistic power was genuine evidence of the depth and reality of his philosophic quality – that only one who had both a direct consciousness of his subject-matter and a sympathetic consciousness of what was stirring, unexpressed, in the minds of other men, could attain Mr. James's artistic distinction.

Even this slight note of appreciation would be incomplete did I not speak of one of the most delightful traits of Mr. James's generous personality – his cordial attitude toward anything that struck him as genuine and individual in the efforts of any other writer, no matter how remote the thought from Mr. James's own. "Philosophy," Mr. James used to say, "is a lonely bug"; and the solitary reflections of many comparatively unknown men in America have been relieved by a word of appreciative encouragement from Mr. James. At times, indeed, Mr. James's discovery of a Spinoza or a Hegel born out of due season, caused some embarrassment to those of us who were less generous. The same largeness of attitude Mr. James carried into discussion and controversy. It would be a nice matter to decide just how much of his reputation for inconsistency was due to his willingness to make concessions to his opponents in the hope of finding common ground beneath, and to his large-minded indifference to minor details of his own former writings.

It would not be fitting to close a notice in a journal read for the most part by professional philosophers without noting Mr. James's religious belief in the possibilities of philosophy. In spite of his not taking philosophic conventionalities at all seriously, he took philosophy itself very seriously. His popular hold is not at all due, I think, simply to his charm of style. His readers instinctively feel that here is a man who believes something and whose belief

is not professional and acquired, but personal and native; a man who believes so deeply in the importance of what he sees and reports that he is not satisfied until his readers also see and have their tone of belief and life modified accordingly. He was, especially in his later writings, an apostle seeking the conversion of souls. Many a note or postal-card of his will be found, I imagine, which refers to the possibility of some discovery, by someone, perhaps to come soon, of a solving word by which light will be made to shine in darkness. When, in one of his recent writings, he refers to the "pragmatistic church," it is not a sectarian and exclusive spirit which animates the phrase, but a fervor of faith in the importance of genuine philosophy. It is a difficult thing for professional philosophers to retain this genuine faith in its simplicity. It gets lost in the mazes of scholarship; wrapped in the napkin of specialization and buried in the ground of professionalism; or it dissipates along with the disillusionizing of early ardent hopes. Our greatest act of piety to him to whom we owe so much is to accept from him some rekindling of a human faith in the human significance of philosophy.

PROFESSOR WILLIAM JAMES

Eric S. Waterhouse. "Professor William James." *London Quarterly Review* 114.2 (October 1910): 317–320.

Not since the death of Lotze has Philosophy borne a greater loss than the death of Prof. William James of Harvard. Today, thirty years after his death, the influence of Lotze is more powerful than at any time during his life. It is only the truly great whom time respects after they have fallen. That such will be the lot of Prof. James may be affirmed without uncertainty. Pragmatism is a philosophical insurrection, and the dust-clouds of the battle-field obscure the personalities in the fight. When the dust is laid and the echoes of the firing are stilled, the historian gives his verdict, and time respects it.

It is frequently to be noticed that the man of genius is the son of the man of ability. The Rev. Henry James, father of William James and his distinguished brother Henry James the novelist, was a strong personality. His religious views, which were influenced largely by Swedenborg, were too independent in construction and expression to allow him to remain within any organized Church. In support of them he issued a series of books, mystical, original, and marked by a vivid style. It is easy to trace in the son the inheritance from the father. During his children's earlier years Mr. Henry James resided in this country, making close acquaintance with Carlyle, but returned subsequently to Boston, which was the family home, although the future professor of psychology had been born in New York on January 11, 1842. At Boston he continued his studies, and finally graduated in medicine at Harvard in 1870. Shortly afterwards he received an appointment on the medical faculty of that university. From this point developed the psychological bent of his mind. It was at the time when psychology was entering upon the new phase of its existence, and from being an art dependent upon unaided introspection, not to say guesswork, was becoming a science; experimental, exact, and comparative. His medical training constituted a natural introduction to the new method, and within a few years he was appointed professor of psychology. In 1890 appeared his *Principles of Psychology*, which received instant recognition as a standard work. Not merely in its erudition, or in its originality, such as, for example, his theory of emotion, but in its arresting presentation of the subject, is the book remarkable. Prof. James made a technical topic as interesting as an essay, and better still wove the interest warp and woof with the subject-matter. It is one thing to enliven

tedium with an occasional permission to the reader to stand at ease: it is another to express a difficult subject so that the reader does not know fatigue. That is the rare art which Prof. James had learned, and never lost in any of his writing.

Psychology led to philosophy and to the philosophical chair at Harvard, which he occupied till his retirement in 1907. In 1902 he published his Gifford lectures, delivered at Edinburgh, under the title *The Varieties of Religious Experience*. The book marks an epoch rather than an episode in religious philosophy. It was the first adequate attempt to estimate religious experience as a psychological, that is to say scientific, fact, and Prof. James succeeded in showing that upon this undeniable ground can be based a philosophy of religion. The major part of the volume is given over to the investigation of typical and extraordinary religious experiences, and the philosophical conclusions are only summarized. He cherished the hope of completing the task, but other work pressed heavily upon a health already failing, and the sequel is left to, and doubtless will be fulfilled by, the many disciples who have been trained to think with him.

Latterly he became the acknowledged leader of the Pragmatist movement, issuing successively *Pragmatism*, *A Pluralistic Universe*, and *The Meaning of Truth*. The conclusions conveyed' in these volumes had long been maturing in his mind. In *The Will to Believe*, issued in 1896, the framework of a Pragmatist philosophy is to be found, though tentative and not definitely named. He has also republished essays written in the early eighties which reveal the same fundamental convictions. It is not possible in a brief note to do justice to Prof. James's stimulating and original views, and I must ask leave to refer the reader to my articles upon *The Religious Philosophy of William James* and *Pragmatism* in the issues of this *Review* of July 1906 and April 1908, and to a general article on *The Present Position in Religious Philosophy* in the last issue. It may, however, be asserted that the root idea of Prof. James's philosophy is that of the freedom of the will. Though regarding it as incapable either of strict scientific proof or disproof, he adopts the idea as ethically imperative. Hence his opposition to Materialism and Absolutism, both of which deny freedom to man, the one in the name of physical science, the other in the name of high thinking. A determined universe was for Prof. James foolishness. It had neither meaning nor purpose; it was a sham-fight, not a struggle, a parade at arms, not a battle. Believing in the real liberty of the will, he necessarily regarded it as a real cause. Hence it follows that the universe is not ready-made, but in the making; a world with real chances, real issues, real successes, real failures. For such a philosophy the time process is not, as Absolute Idealists contend, an illusion, but fundamental reality. The whole duty of man is to cooperate with God in the making of the world upon which the Creator Himself is continuously working.

This will seem sound and wholesome to unphilosophically trained minds, but to those versed in the dogmas of the philosophical schools it is revolutionary, and – if they are Idealists of the usual pattern – probably pernicious. Yet it is difficult to see how the thought of those who adopt the fundamental freedom of the will can travel in any widely different direction. There can be no doubt that the orthodox philosophy of many centuries has been inveterately artificial. For this reason Positivism abandons it to uselessness; Pragmatism, however, redeems it for service. If philosophy is to be more than logic chopping, it must be integrally a part of life, one of the forces that go to the making of life. Can any one say that the ordinary Absolutist and Intellectualist philosophies fulfill this? Belief, for Prof. James, is that which is acted upon, and he resented a philosophy which demands that we should believe in theory what we cannot act upon in practice; believe the time process to be an illusion, and treat it as real; believe man to be determined, and judge him as if he were free. Such a divorce is fatal. Pragmatism is a philosophy that can be brought into real contact with life and religion. The scholastic philosophies dwell in a ghost-world apart. Though not without its besetting dangers, Pragmatism has a future to fulfil and a function to serve greater than its opponents imagine. The strong intellect and charming pen that have framed its earliest outlines are gone, but the personality of Prof. James will live in a philosophy so expressive of it, and his influence will long remain to guide its course and shape its wider destiny.

WILLIAM JAMES

Wilhelm Jerusalem. "William James." *Die Zukunft* 73.6 (5 November 1910): 186–190.

Am achtundzwanzigsten August ist der große amerikanische Psychologe William James in seiner Heimat gestorben. Sein Name ist in den letzten Jahren bei uns besonders viel genannt geworden; am Meisten in Verbindung mit der von James zwar nicht erfundenen, aber sehr energisch vertheidigten neuen philosophischen Methode, die unter dem Namen "Pragmatismus" von Amerika herübergenommen ist. Ich habe selbst zur Bekanntmachung dieser Denkrichtung in Deutschland Einiges beigetragen und mich über Wesen und Werth des Pragmatismus mehrmal ausgesprochen (auch in der "Zukunft" vom zehnten Oktober 1908). Heute aber, wo es gilt, die Summe von James' Lebensarbeit zu ziehen, habe ich den Eindruck, daß man über den Pragmatiker James den Psychologen zu sehr vergißt. James war aber vor Allem einer der besten Kenner und Erforcher des menschlichen Seelenlebens. Hier sind die Wurzeln seiner Kraft. Wenn man James' Bedeutung für die Geistesgeschichte der Menschheit verstehen will, so muß man zunächst den Psychologen ins Auge fassen.

James ist, ähnlich wie Wundt, von der Medizin her zu Psychologie gekommen. Er hat mehrere Jahr hindurch Anatomie und Psychologie vorgetragen und das Leben von seiner physischen Seite her zu erforschen gesucht. Er sah aber ein (und auch hierin hat er Aehnlichkeit mit Wundt), daß die Lebensvorgänge zu erblicken vermag. Wer in die Tiefe dringen und das Leben da erkennen will, wo es nicht nur betrachtet und erforscht, sondern wirklich gelebt wird, Der muß den Standpunkt ändern und von innen heraus den Lebensprozeß da zu erfassen suchen, wo er einzig und allein lebendige Wirklichkeit ist. Das heißt aber nichts Anderes als: Das Leben kann in seiner vollen Eigenart nur von der seelischen Seite her verstanden werden. Das erkannte James und wurde, nachdem er bereits "die Mitte seines Lebensweges" überschritten hatte, zum Psychologen. Damit aber hatte er das Gebiet gefunden, das seiner wissenschaftlichen und menschlichen Eigenart am Meisten entsprach. Amerikanischer Wirtlichkeitsinn, ein kraftvolles Temperament und eine wahre Sehergabe im Schauen und Darstellen seelischer Vorgänge machen James' psychologische Geschriften zu einer eben so reizvollen wie mächtig anregenden und gründlich belehrenden Lecture.

Wer den ganzen James mit all seinem Temperament und mit seinem in die Tiefe dringenden seelischen Blick kennen lernen und auf sich wirken lassen will, Der muß zu seinem grundlegenden ausführlichen Wert, zu den zweibändigen *Principles of Psychology* (erschienen 1890) greifen. Leider ist dieses Werk nicht ins Deutsche übersetzt worden. Nur von dem Auszug, den James einige Jahre später als *"textbook"* veröffentlichte, ist kürzlich eine deutsche Ausgabe erschienen. Aber in diesem *textbook* hat James, wie er im Vorwort selbst sagt, nicht nur alle Citate, sondern auch die ganze Polemik des größeren Werkes weggelassen. Doch gerade in diesen polemischen Bemerkungen liegt oft ein großer Reiz und eine große Kraft. Man lese, zum Beispiel, wie James über Gerbarts Vorstellung-Mechanik oder über Hegels Begriffs-Dialektik urtheilt: und man wird sehen, wie viel positiver Inhalt in dieser temperamentvollen Kritik steckt.

Von den vielen neuen Auffassungen seelischer Vorgänge, die man bei James findet, will ich nur eine hervorheben, die allerdings grundlegend ist. Ich meine James' Lehre vom "Strom des Denkens" oder, wie er es in der kleinen Psychologie ausdrückt, vom "Strom des Bewustseins". Schon Wundt hat den überaus wichtigen Gedanken ausgesprochen, daß alles Psychische uns niemals als ein ruhendes, beharrendes Sein, sondern immer nur als ein in steter Veränderung befindliches Geschehen gegeben ist. Diese Eigenart alles Seelischen ist von maßgebender Bedeutung für die Methode der Psychologie. Man darf hier nie von stabilen Gegenständen, sondern muß immer nur von Vorgängen sprechen. Das Selbe meint auch James mit seinem "Strom des Bewustseins"; aber er meint noch etwas mehr.

Das Seelenleben ist für James nicht nur ein Geschehen, das in der Zeit verläuft, es ist zugleich lebendige, auswählende, von einem Ich ausgehende Thätigkeit, eine Entfaltung von Kräften, die Richtung haben und Richtung geben. In dieser konkreten und aktivistischen Auffassung des Seelenlebens berührt sich James besonders nah mit Henri Bergson, dessen Philosophie er in einem seiner letzten Werke (*A pluralistic Universe* 1909) eben so begeistert wie geistvoll charakterisirt hat. Was Bergson *"la vraie dureeî*, die wahre Dauer nennt, das blos zeitliche, aber dennoch lebendig inhaltvolle seelische Geschehen, das schneeballartig alles Vergangene in vollkommener Durchdringung in sich enthält und als schöpferische Entwickelung immer Neues, Unvorhersehbares hervorbringt, Das ist so ziemlich das Selbe wie James' "Strom des Bewustseins".

Die konkrete und aktivistische Auffassung des Seelenlebens: das ist der Grundzug von James' Psychologie und zugleich die Erklärung für seine religiöse und philosophische Weltanschauung. Das konkrete besteht darin, daß James die Seelischen Vorgänge in ihrer vollen individuellen Bestimmtheit und individuellen Färbung als persönliche Erlebnisse anschaut und darstellt und sich davor hütet, die Auffassungen und Zergliederungen des Psychologen in das seelische Erlebnis selbst hineinzuschmuggeln. James nennt dieses von

den meisten Psychologen unbewußt geübte Gefahren *"The Psychologists fallacy"*, den Trugschluß oder die Fehlerquelle des Psychologen, und sein ganzes Buch ist eine energische Bemühung, diesen Fehler zu vermeiden.

Diese konkrete Auffassung giebt zunächst seinen psychologischen Beschreibungen eine ganz unvergleichliche Lebendigkeit, Klarheit und Realität. Je tiefer sich nun James in diese Betrachtungweise des Seelenlebens versenkte, desto deutlicher ging ihm die Verschiedenheit des Seelischen vom Körperlichen auf, desto weniger konnte er im Glauben an selbständige übernatürliche geistige Mächte etwas Widersprechendes finden. In der Tat bekennt sich denn auch der vom Haus aus religiös veranlagte Mann in seinem religionpsychologischen Werk, in den *"Varietes* (sic) *of religious experience"*, offen zum Supranaturalismus. Aber auch in diesem Werk ist die psychologische Leistung das Wichtigste. James breitet zum Grund von Bekenntnißschriften moderner amerikanischer Sektengründer einen Reichtum des religiösen Erlebens vor uns aus, von dem wohl die wenigsten Leser vorher eine Ahnung hatten. Das Buch bietet also auch Dem, der nicht auf dem philosophischen Standpunkt des Verfassers steht, eine geradezu unerschöpfliche Fundgrube für die Psychologie der Religiosität.

Die aktivistische Auffassung des Seelenlebens besteht darin, daß für James alles seelische Geschehen, das Wahrnehmen, die Erinnerung, die Phantasiethätigkeit und die Gefühle in letzter Linie immer als Werkzeuge des Willens zu deuten und als auf Thätigkeit gerichtet zu denken sind. Besonders klar und zugleich besonders liebenswürdig kommt diese Auffassung in James' Ansprachen an Lehrer, in seinen *"talks to teachers"* (1899) zum Ausdruck. Dieses Buch, dann unter dem Titel "Psychologie und Erziehung" auch deutsch erschienen ist, scheint mir am Besten geeignet, in James' Gedankenwelt einzuführen.

Die konkrete Auffassung des Seelenlebens hat James schließlich zum Pluralismus und die aktivistische zum Pragmatismus geführt. Die Welt ist uns als bunte Vielheit, als unendliche Mannichfaltigkeit gegeben. Die Einheit des Universums ist dem Menschen als Aufgabe gesetzt, darf aber seineswegs als Voraussetzung oder gar als Urthatsache gelten. Die Vereinheitlichung herbeizuführen: dazu braucht er einer Philosophie der That; und diese will der Pragmatismus schaffen. So ist der tiefdringende Psychologe allmählich zum Schöpfer einer lebendigen und Leben fördernden Philosophie geworden.

William James war durch und durch Amerikaner. Bei aller Hochachtung vor der europäischen Wissenschaft war sein Ehrgeiz, nicht nur zu empfangen, sondern auch zu geben. Charakteristisch dafür sind einige einleitende Worte in der ersten seiner Gifford- Vorlesungen, aus denen das erwähnte religionpsychologische Buch besteht. "Für uns Amerikaner", sagt er da,"ist es seine vertraute Erfahrung, von europäischen Gelehrten Belehrung zu empfangen. Uns scheint nur natürlich, daß wir zuhören, wenn Europäer sprechen. Die entgegengesetzte Gewohnheit, selbst zu sprechen, während Europäer zuhören,

haben wir uns noch nicht zu eigen gemacht. Aber wenn der Strom einmal von Westen nach Osten zu fließen begonnen hat, so lassen Sie mich hoffen, daß es auch weiterhin thun wird." In der That hat sein Ruf und seine Persönlichkeit eine solche Anziehungskraft erworben, daß eine nicht geringe Zahl von deutschen Studenten ein oder zwei Semester auf der Harvard University zubrachte, wo James bis vor wenigen Jahren Psychologie vortrug.

Mit deutscher Sprache und deutscher Wissenschaft war James innig vertraut. Nicht selten begegnet man deutschen Wörtern in seinen Schriften und manchmal citiert er eine Stelle aus Goethes Faust oder ein Epigramm von Lessing. Von deutschen Denkern nennt er im Vorwort zur großen Psychologie ausdrücklich Lotze und Wundt, in seinen späteren Arbeiten öfters Wilhelm Ostwald und besonderes Ernst Mach, den er auch einmal in Prag aufsuchte.

Ich selbst habe James leider nie persönlich kennen gelernt, wohl seit zwölf Jahren mit ihm korrespondirt. Eingeleitet wurde diese Korrespondenz durch einen für mich eben so überraschenden wie erfreulichen Brief, in dem James sich ausführlich über mein Buch "Die Urteilsfunktion" aussprach, das ich ihm einige Jahre vorher zugeschickt hatte. Seit dieser Zeit haben wir einander fast alle Publikationen zugeschickt. James' Antworten waren oft nur kurz, denn das Briefeschreiben war, wie er sich einmal mir gegenüber ausdrückte, *"contrary to my psyche"*, aber immer interessant und inhaltvoll. So schrieb er mir vor etwa zehn Jahren, er hoffe, noch *"bevore* (sic) *shuffling off this mortal coil"* seine eigene Philosophie herauszubringen. Nach den Vorlesungen, die er im Frühjahr 1909 in Oxford über das pluralistische Weltbild gehalten hatte, war er durch die vielen Mißverständnisse, denen er begegnete, recht verstimmt und schrieb mir, er habe die Hoffnung aufgegeben, durch Diskussionen anders Denkende zu überzeugen; man müsse den künftigen Generationen überlassen, die Synthese der verschiedenen Denkrichtungen zu vollziehen. Meinen Aufsatz über die Soziologie des Erkennens, der in der "Zukunft" am fünfzehnten Mai 1909 erschien, begrüßte er mit warmem Antheil und regte mich an, das dort angeschlagene Thema weiter zu bearbeiten, worauf er später sogar nochmals zurückkam. Seinen letzten Gruß erhielt ich im Juni dieses Jahres aus Nauheim, wo er von einem Herzleiden Heilung gesucht hat. Die Karte war von ihm und Professor Julius Goldstein aus Darmstadt unterzeichnet, aus dessen Feder wir in nächster Zeit eine Uebersetzung von James' Buch *"A pluralistic Universe"* zu erwarten haben.

Als die Nachricht von seinem Tode kam, mußte ich an das Wort Heraklits denken: "Der Seele Grenzen kannst Du nicht ausfinden, und ob Du jegliche Straße abschrittest; so tiefen Grund hat sie." Auch William James hat die Grenzen der Seele nicht ausgefunden; aber er hat auf dem Wege dazu so manchen neuen Pfad entdeckt und für die kommenden Geschlechter gebahnt.

AN OPEN MIND: WILLIAM JAMES

Walter Lippman. "An Open Mind: William James." *Everybody's Magazine* 23.12 (December 1910): 800–801.

Within a week of the death of Professor William James of Harvard University, the newspapers had it that Mr. M. S. Ayer of Boston had received a message from his spirit. This news item provoked the ridicule of the people who don't believe in ghosts, but the joke was on Mr. Ayer of Boston. When, however, it was reported that Professor James himself had agreed to communicate with this world, if he could, and, in order to test the reports, had left a sealed message to be opened at a certain definite time after his death, the incredulous gasped at the professor's amazing "credulity."

William James wasn't "credulous." He was simply open-minded. Maybe the soul of man *is* immortal. The professors couldn't prove it wasn't, so James was willing to open his mind to evidence. He was willing to hunt for evidence, and to be convinced by it.

And in that he was simply keeping America's promise: he was actually doing what we, as a nation, proclaimed that we would do. He was tolerant; he was willing to listen to what seems preposterous, and to consider what might, though queer, be true. And he showed that this democratic attitude of mind is every bit as fruitful as the aristocratic determination to ignore new and strange-looking ideas. James was a democrat. He gave all men and all creeds, any idea, any theory, any superstition, a respectful hearing.

His interest in spiritualism is merely one illustration in a thousand. The hard scientists knew it was a hoax because they couldn't explain it, and the sentimentalists knew it was the truth because they wished it to be: but James wanted to know the facts. So he went to Mrs. Piper, and heard her out. Nay, he listened to Palladino and to Münsterberg. They pretended to know, and maybe they did.

And last year, when Frank Harris published his book on Shakespeare, to show that the "unknown" life and character of the poet could be drawn from his works, the other professors laughed the theory out of court. James went to Shakespeare and read the plays all over again to test the Harris theory. Maybe the poet *could* be known by his works. The fact that the theory was revolutionary did not alter the possibility that it might be true.

So with religion. A scientist, living in an age when science is dogmatically irreligious, he turned from its cocksure reasoning to ask for the facts. He went

to the lives of the saints! Not to Herbert Spencer, you see. When he wanted to study the religious experience he went to the people who had had it, to Santa Theresa and Mrs. Eddy. They might know something the professors didn't know.

And again: at the age of sixty-five, with the whole of New England's individualism behind him, he asked about socialism. When he met H. G. Wells, he listened to the socialist, and, as it happens, was converted. So he said so. James was no more afraid of a new political theory than he was of ghosts, and he was no more afraid of proclaiming a new theory, or an old one, than he was of being a ghost. I think he would have listened with an open mind to the devil's account of heaven, and I'm sure he would have heard him out on hell.

James knew that he didn't know. He never acted upon the notion that the truth was his store of wisdom. Perhaps that is why he kept on rummaging about in other people's stores, and commending their goods. He seemed to take a delight in writing introductions, and appreciations of new books, and in going out of his way to listen to a young doctor of philosophy, or an undergraduate discussion of pragmatism, or the poetry of an obscure mystic. And, optimist that he was, by virtue of his unceasing freshness of interest, there is nothing more open-minded in our literature than his chivalrous respect for the pessimism of Francis Thompson.

> "Speak not of comfort where no comfort is,
> Speak not at all: can words make foul
> things fair?
> Our life's a cheat, our death a black abyss:
> Hush and be mute, envisaging despair."

He felt with all sorts of men. He understood their demand for immediate answers to the great speculative questions of life. God, freedom, immortality, nature as moral or non-moral – these were for him not matters of idle scientific wonder, but of urgent need. The scientific demand that men should wait "till doomsday, or till such time as our senses and intellect working together may have raked in evidence enough" for answers to these questions, is, says James, "the queerest idol ever manufactured in the philosophic cave." We cannot wait for a final solution. Our daily life is full of choices that we cannot dodge, and some guide we simply must have. There can be no loitering at the crossroads. We are busy. We must choose, whether we will it or not, and where all is doubt, who shall refuse us the right to believe what seems most adapted to our needs? Not know, you understand, but believe.

That is the famous position taken in "The Will to Believe." As James has since pointed out, its real title should have been "The Right to Believe." No doctrine in James's thinking has been more persistently misunderstood. Yet it rests on the simplest of insights: that atheism and theism are both dogmas, for there is

scientific evidence for neither; that to withhold judgment is really to make a judgment, and act as if God didn't exist; that until the evidence is complete men have a right to believe what they most need.

James has acted upon that right. He has made a picture compounded of the insights of feeling, the elaborations of reason, and the daily requirements of men. It is a huge guess, if you like, to be verified only at the end of the world. But it has made many men at home in the universe. And this democrat understood the need of feeling at home in the world, and he understood also that the aristocrats are not at home here. (Perhaps that's why they are aristocrats.) "The luxurious classes," he says, "are blind to man's real relation to the globe he lives on, and to the permanently hard and solid foundations of his higher life." And he prescribed for them – for their culture, I mean – this treatment: "To coal and iron mines, to freight trains, to fishing fleets in December, to dishwashing, clotheswashing and windowwashing, to road-building and tunnel-making, to foundries and stoke-holes, and to the frames of skyscrapers, would our gilded youths be drafted off according to their choice, to get the childishness knocked out of them, and to come back into society with healthier sympathies and soberer ideas."

This, and thoughts like this, and kindnesses like this, put James not alone among the democrats of this uncertain world, but among the poets also; among the poetic philosophers who, like Goethe, Schopenhauer, and Whitman, have a sense of the pace of things. Sunlight and storm-cloud, the subdued busyness of outdoors, the rumble of cities, the mud of life's beginning and the heaven of its hopes, stain his pages with the glad, sweaty sense of life itself.

It is an encouraging thought that America should have produced perhaps the most tolerant man of our generation. It is a stimulating thought that he was a man whose tolerance never meant the kind of timidity which refuses to take a stand "because there is so much to be said on both sides." As every one knows, he fought hard for his ideas, because he believed in them, and because he wanted others to believe in them. The propagandist was strong in William James. He wished to give as well as receive. And he listened for truth from anybody, and from anywhere, and in any form. He listened for it from Emma Goldman, the pope, or a sophomore; preached from a pulpit, a throne, or a soap-box; in the language of science, in slang, in fin rhetoric, or in the talk of a ward boss.

And he told his conclusions. He told them, too, without the expert's arrogance toward the man in the street, and without the dainty and finicky horror of being popular and journalistic. He would quote Mr. Dooley on God to make himself understood among men. He would have heard God gladly in the overalls of a carpenter, even though He came to preach that the soul of man is immortal. So openminded was he; so very much of a democrat.

WILLIAM JAMES

James R. Angell. "William James." *Psychological Review* 18.1 (January 1911): 78–82.

No one who knew William James can ever write of him in a wholly objective and dispassionate spirit. Nor can one cherish any hope of transfusing into words the abundant richness of his wonderful nature. Any just estimate of the man would require for its accomplishment a soul as pure and fine and brave as his own. The final valuation of his work must be confided to another generation. These lines are devoted to a few brief reminiscences, and particularly to such as may remind us of the profound changes in our psychological thought and practice for which we are primarily indebted to him.

To be sure at the time of his death, James was generally regarded as a philosopher rather than as a psychologist. And a philosopher he was in the best sense of the word, a devoted and courageous seeker after the deepest truths of life. But he was also a psychologist, easily first among his countrymen, and to emphasize this fact is the peculiar privilege of this *Review*, with the first number of which his name was associated as an editor.

We may begin our reminiscences with the publication of *The Principles of Psychology* in 1890. Prior to that James had been writing occasional brilliant articles and essays, some of which appeared later in modified form as chapters in the book, still others coming to life again in the volume entitled *The Will to Believe*. But until the appearance of *The Principles* his influence was on the whole secondary and local. With the publication of this great work, which the writer believes to be altogether his most valuable and lasting monument (it has in it most distinctly the seeds of all his later philosophical development) a profound and radical change came over the scene.

Who does not remember the sense of glowing delight with which we first read the pages of the big, cumbrous, ill-bound and rather ill-printed volumes? It was like inhaling a rare, pungent mountain air, vital, bracing and almost intoxicating. To many of us of the younger generation the book was assigned as a text. We read it as one reads the most fascinating tale of a master – spell-bound and transported and yet withal feeling ourselves acquiring new powers, and gaining command of pregnant thoughts. Scores of other readers fared as did we and so it came to pass that almost over night James became the recognized fountain head of the most original and most vigorous psycho-

logical thinking in our country. To get the perspective one must recall the conditions of our literature at that time.

In 1887 Ladd published his treatise on *Physiological Psychology* and Dewey his text-book on *General Psychology*. Two years later came Baldwin's *Senses and Intellect*. Signs were therefore not wanting of an intellectual ferment at work. But Ladd's volume was too technical to attract general attention, and the other two books, although favorably received, suffered under the suspicion of being philosophy rather than pure psychology, added to which both were addressed to the needs of college students and followed rather rigid lines of exposition. Prior to the appearance of these works, American students had been nurtured almost exclusively on Porter, McCosh, Hickok, Wayland, Haven, Hopkins, and their various followers. Not that all these authors deserve in any sense to be classed together, but simply that they represented in various degrees scientifically archaic and outworn methods in psychology, which were nevertheless still current in our colleges. At such a critical period appeared the epoch-making *Principles*.

It is difficult to appreciate how much that is now familiar and commonplace in psychological writing was introduced by James. But the simplest process of comparing the authors last mentioned with the writings of to-day abundantly exhibits the transition which has occurred and for which James more than any other one man is directly responsible.

Perhaps the most fundamental of all the doctrines he introduced and popularized was the physiological conception of habit as the basal principle of mental organization. He not only made this pivotal in his account of the associative processes of the intellect, but he exhibited it as the central feature in the development of the will. When a decade later he published his *Talks to Teachers*, he took it up again and made it cardinal for educational practice.

If the principle of habit may in certain ways be regarded as the most important interpretative principle running through his work and the one which enlisted the widest and most immediate interest – and general assent – it must in other ways share the honor with its complementary principle, the cerebralistic hypothesis of the conditions of thought.

This hypothesis is of course in no sense an invention of William James. Indeed, in many ways it simply formulates facts well known to the veriest way-farer. But no previous English writer on psychology since Hartley's day had espoused this view so explicitly and at the same time made such constant practical use of it. James turns to it at every point for the explanation of mental phenomena, a practice which caused him to be branded by the orthodox as a dangerous materialist.

He shared with Lange the honor of revolutionizing the current view of emotion. The exposition of his theory rescued the subject at a stroke from the

dull routine of purely descriptive psychology and, notwithstanding a constant fire of acute criticism, his position has substantially held its own up to the present day.

Following closely in the footsteps of Darwin, he made instinct an essential part of the study of the human mind in a way no other psychologist had done. He took a large, flexible, dynamic view of instinct which gave it a place in the very forefront of human life and so of human psychology, instead of relegating it to the limbo of 'left-overs' from our animal ancestry for which apologies must be made and moralizing indulged.

He wrote perhaps the only thoroughly entertaining account of reasoning that we have in the English language and yet managed to make clear much of what is technically most essential to know, if one would understand the actual workings of the mind. Despite their admirable analytic fidelity to detail, one has only to compare with James' chapter on 'Reasoning' in the *Principles*, certain of the contemporary German analyses of the process, to feel that he is in reality closer to the pith of the matter than they.

His account of space perception established the subject on a level which it had never before reached in modern English writings and thereby rendered a service of lasting value. It still remains, twenty years after it was written, one of the most valuable of store-houses for all the fundamental phases of the subject.

James made a conscious and systematic struggle for the recognition of the vague, the fugitive, the transitory, in consciousness, as over against the 'block-house' scheme of mental organization. This tendency appeared most clearly perhaps in his celebrated chapter on the Stream of Consciousness, and more especially in his doctrine of 'Feelings of Relation' in which we have the first adequate insistence in contemporary writing on this aspect of consciousness.

His conception of the self as a hierarchy made a deep impression, not so much perhaps for its intrinsic novelty, as by reason of the peculiar picturesqueness and force of his description and his pungent sallies at the expense of popular complacencies.

He made much wider use than had any previous English-speaking psychologist of materials drawn from the pathological side of mental life. This was in part no doubt a reflex of his medical training, in part was due to his intrinsic interest in the unusual. This trait appears very strikingly in the selection of material for his great work on religious experience.

No one thing so radically divided professional opinion of James as his support of the Psychical Research Movement. In England the society began its career under auspices in many respects most favorable and in all respects scientifically respectable, not to say, eminent. But in this country, James for years stood almost alone among men of high intellectual repute, and although he was eminently conservative in his estimate of the results of the work of the society, he nevertheless committed himself to belief in certain mediumistic

phenomena in a way which seriously offended many of his professional colleagues. At best, they regarded him as a man whose judgment could not be trusted, at worst as an unwitting backer of quackery and fraud.

His position on the issue was all of a piece with his insistent and never failing protestantism, his passion for fair play, and a just hearing for all sides of every question. He was never afraid to make a mistake if only it were honest, and he started off on a new tack when he found himself in error, as though fallacy were a regular part of the day's work. He had a wholesome contempt, which I have heard him more than once express with characteristic vigor, for the pose of infallibility and essential omniscience assumed by certain distinguished scholars. It seemed to him at once petty and contemptible.

Whether or not we agree with his view of psychic research, it will be a thousand pities if James' attitude in the matter should fail to teach us of the younger generation the high rewards of honest independence and the insidious dangers of moral stultification which lurk in a lethargic or a cowardly intellectual conformity to ruling creed, whether of church or of science.

In this matter, as in the others to which we have referred, we may gratefully look for his most enduring contributions not so much in the specific doctrines which he taught and defended, as in his splendid spirit of eagerness for the truth, his open-minded willingness to find this truth in humble and out of the way places, and his dauntless courage in proclaiming his faith in whatsoever he found worthy.

With few men could an inventory of his accomplishments, however impressive, be so entirely and grotesquely inadequate as with James. It has been a favorite comment upon his writing that in his case the 'style is the man' in an extraordinary measure. And the saying is true, but what it leaves unsaid is more than what it utters. His personality was fascinating and magnetic to a degree which his writings hardly indicate. This was perhaps in part due to the wonderful play of light in his eyes, in part to the singularly sweet and resonant tones of his voice, to say nothing of the racy picturesqueness of his words. But inwardly no doubt it sprang from the unsounded wells of sympathy in his nature which made every human creature a thing of at least passing interest to him.

As a teacher he was especially sympathetic and stimulating. He overestimated the capacities of many of his students most seriously, or at least, appeared to do so, but this only put them on their mettle to make good his estimate. What he did in this way to encourage his own pupils, he did more widely for struggling talent wherever he chanced to note it. No brochure so obscure, no writer so unknown, but that if James detected any spark of promise, he sent a word of appreciation. How much such encouragement meant to many a young scholar toiling for recognition, no one will ever know. But the sum must be large beyond belief.

William James was that rarest of human beings – a great man who was also simple, kindly, brave and true. His memory will always be with us as an inspiration and a benediction.

WILLIAM JAMES: LIFE AND PERSONALITY

Émile Boutroux. "William James: Life and Personality." *William James*, trans. Archibald Henderson and Barbara Henderson (London: Longmans, Green, and Co., 1912), pp. 10–18.

The life of Professor James was entirely devoted to studying, experimenting, observing, reading, reflecting, investigating, instructing, talking and writing. He knew a great deal, thanks to his lively intellectual curiosity, his powerful and precise memory, his knowledge of languages, his love of books, and his innumerable associations in every country. But he appreciated only the judgments immediately drawn from observation of realities and constantly controlled by this same observation. He regarded as negligible any formula which could not be translated into a fact of experience. One word was constantly upon his lips, expressing that mode of thought which he especially prized: the word *direct*. He rather enjoyed hurling facts, brutal experience, life, common sense, those ordinary, common and familiar things so dear to Pascal, into the midst of the scholarly systems, the lofty phrases, the sacrosanct traditions of the scholastic, ancient and modern.

Among those students who flocked to his lectures, many came chiefly to obtain ready-made answers in view of their examinations; but he took no pains to satisfy them. With all the fine freshness of his vivacity and verve, he gave his audience the result of his researches and of his personal reflections upon the problems which absorbed him, without so much as recalling the existence of an academic programme. To illustrate, one of his hearers one day interrupted him with these words: "To be serious, for a moment."

This very clever and eloquent professor "professed" as little as possible. He was incapable of binding himself by the rules of official pedagogy. He threw into his speech his ceaselessly active thought, his ardent soul, his whole being. Whether he taught in his own class room or lectured outside, whether he conversed familiarly with his friends, the spontaneity of his discourse was always arresting. Everything he said was full of pith and suggestion, and he never expressed himself in a conventional, abstract and impersonal way. His ideas left his brain thoroughly alive and impregnated with his personality; the most unexpected, ingenious, and amusing expressions fell naturally from his lips and fixed themselves in the minds of his hearers, who were at once surprised, charmed, and inspired to think for themselves. There was never a more perfect illustration of the too frequently

quoted saying of Pascal: "We are delighted when we expect to see an author and find a man."

He wrote just as he talked. Was there, in his case, any great difference between the two occupations? In reading his works, we seem to hear him speak. In the arrangement of his ideas, there is that same subtle order, free and lively – Pascal's "the order of the heart" – more profound and possibly truer than the gross and palpable order of geometric demonstration. There is the same picturesque, personal language, full of ingenuities and suggestive images. There is the same vivacity, the same vigour of attack and of argument. There is also a superior elegance, marvellous mixture of knowledge, precision, nicety, force, naturalness, grace, and a sort of abandon. Consequently, this profound and trustworthy thinker is, without exerting himself to that end, an author, an artist, one of the glories of American literature as well as of its philosophy. And among other merits, his works possess this rare attribute: they are read.

The life bodied forth so directly by this learning and these works is, in its extreme simplicity, one of incomparable moral richness.

While certain thinkers devote themselves to transforming immediate realities, along with the passions, the conflicts and the gropings which they involve, into pure ideas, abstract, rigid and impassable, and to observing in some fashion changing things in the guise of changeless eternity, for William James ideas, as such, possess meaning and value in direct proportion to the measure of life that they retain; and every activity of his mind is a cordial participation in the emotions, the labours, and the present tasks of his country and of humanity. He does not merely give expression, as an exceptionally well informed man and subtle critic, to his views upon the conditions of his great philosophic problems, such as the methods and the significance of science, the relations between science and religion, education, the value of suffering, conflict and war, the ideal form of human life. In his own mind he sees himself actually facing alternatives evoked by these questions, and he deals with and resolves these questions with all the force of his being, as everyone does when he feels that a question concerns himself, and not merely other people. Hence the personal and sympathetic note of his words. He moved the souls of his questioners, because he spoke from his own soul.

Moreover he brought to the study of the problems of life exceptional virility and loftiness of view. He had a proud and courageous soul; and this pride was founded upon a simple trust in the injunctions of morality and the generous enthusiasms of religion. He had the instinct for sympathy and love, for sacrifice, for the asceticism which disciplines the will, for the heroism consecrated to the ideal. He had little taste for protestations of zeal and devotion, and would doubtless have preferred rude frankness to amiable complacency. He would rather have ventured to recall Alceste than

Philinte. But if he gave freely of himself only to the truly "scious,"[1] he showed an infinitely affectionate, attentive and delicate kindness toward those whom he counted his friends. In that charming residence in Irving Street, which he himself had planned, a large and simple wooden house in the colonial style, surrounded by lawn and trees, like the greater number of the dwelling places in Cambridge, the prevailing atmosphere of the James family was one of very cordial hospitality, as well as of intelligence, wit, frankness, intimacy, outspokenness, work, zest, and earnest.

Such were the conditions in his own family last spring (1910) when Professor James, who in his capacity of physician had followed the course of his malady, decided as a last resort on visiting Paris to consult a distinguished specialist. Neither then nor later, during the period when his sufferings were redoubled and the future grew darker from day to day, did his original humour, his spiritual vivacity, his interest in the present, his inexhaustible courtesy, ever fail him. He doubtless believed that the mind was stronger than the agents which destroy the organism. And he believed that, to men of good will, death itself could not be otherwise than good. The most excruciating suffering, the impatient call of death, wrung from him no complaint, no word or sign of discouragement. To the end he was the man of thought, of faith and of energy, not admitting that our brief wisdom sets any bounds to possibility, and believing that it depends upon us to contribute, by our personal effort, here below and perhaps hereafter, to the conservation and development of the moral and spiritual forces of the universe.

[1] See p. 61.

Section Three

Evaluations of James's Pragmatism, 1910–1940

WILLIAM JAMES'S CONCEPTION OF TRUTH

Bertrand Russell. "William James's Conception of Truth." *Philosophical Essays* (London and New York: Longmans, Green, and Co., 1910), chap. 5, pp. 127–149.

Pragmatism: A New Name For Some Old Ways of Thinking. Popular Lectures on Philosophy, by William James (Longmans, Green, and Co., 1907). The following article is reprinted from the Albany Review, January, 1908, where it appeared under the title "Transatlantic 'Truth'." It has been criticized by William James in *The Meaning of Truth* (Longmans, 1909), in the article called "Two English Critics."

"The history of philosophy," as William James observes, "is to a great extent that of a certain clash of human temperaments." In dealing with a temperament of such charm as his, it is not pleasant to think of a "clash"; one does not willingly differ, or meet so much urbanity by churlish criticisms. Fortunately, a very large part of his book is concerned with the advocacy of positions which pragmatism shares with other forms of empiricism; with all this part of his book, I, as an empiricist, find myself, broadly speaking, in agreement. I might instance the lecture devoted to a problem which he considers "the most central of all philosophic problems," namely, that of the One and the Many. In this lecture he declares himself on the whole a pluralist, after a discussion of the kinds and degrees of unity to be found in the world to which any empiricist may wholly assent. Throughout the book, the distinctive tenets of pragmatism only make their appearance now and again, after the ground has been carefully prepared. James speaks somewhere of Dr. Schiller's "butt-end foremost statement of the humanist position." His own statement is the very reverse of "butt-end foremost"; it is insinuating, gradual, imperceptible.

A good illustration of his insinuating method is afforded by his lecture on common sense. The categories of common sense, as he points out, and as we may all agree, embody discoveries of our remote ancestors; but these discoveries cannot be regarded as final, because science, and still more philosophy, finds common-sense notions inadequate in many ways. Common sense, science, and philosophy, we are told, are all insufficiently true in some respect; and to this again we may agree. But he adds: "It is evident that the conflict of these so widely differing systems obliges us to overhaul the very idea of

truth, for at present we have no definite notion of what the word may mean" (p. 192). Here, as I think, we have a mere *non sequitur*. A damson-tart, a plum-tart, and a gooseberrytart may all be insufficiently sweet; but does that oblige us to overhaul the very notion of sweetness, or show that we have no definite notion of what the word 'sweetness' may mean? It seems to me, on the contrary, that if we perceive that they are insufficiently sweet, that shows that we do know what 'sweetness' is; and the same surely applies to truth. But this remark is merely by the way.

James, like most philosophers, represents his views as mediating between two opposing schools. He begins by distinguishing two philosophic types called respectively the 'tender-minded' and the 'tough-minded'. The 'tender-minded' are "rationalistic, intellectualistic, idealistic, optimistic, religious, free-willist, monistic, dogmatical." The 'tough-minded' are "empiricist, sensationalistic, materialistic, pessimistic, irreligious, fatalistic, pluralistic, sceptical." Traditionally, German philosophy was on the whole 'tender-minded', British philosophy was on the whole 'tough-minded'. It will clear the ground for me to confess at once that I belong, with some reserves, to the 'tough-minded' type. Pragmatism, William James avers, "can satisfy both kinds of demand. It can remain religious like the rationalisms, but at the same time, like the empiricisms, it can preserve the richest intimacy with facts." This reconciliation, to my mind, is illusory; I find myself agreeing with the 'tough-minded' half of pragmatism and totally disagreeing with the 'tender-minded' half. But the disentangling of the two halves must be postponed till we have seen how the reconciliation professes to be effected. Pragmatism represents, on the one hand, a method and habit of mind, on the other, a certain theory as to what constitutes truth. The latter is more nearly what Dr. Schiller calls humanism; but this name is not adopted by James. We must, therefore, distinguish the pragmatic *method* and the pragmatic *theory of truth*. The former, up to a point, is involved in all induction, and is certainly largely commendable. The latter is the essential novelty and the point of real importance. But let us first consider the pragmatic method.

"Pragmatism," says James, "represents a perfectly familiar attitude in philosophy, the empiricist attitude, but it represents it, as it seems to me, both in a more radical and in a less objectionable form than it has ever yet assumed. A pragmatist turns his back resolutely and once for all upon a lot of inveterate habits dear to professional philosophers. He turns away from abstraction and insufficiency, from verbal solutions, from bad *a priori* reasons, from fixed principles, closed systems, and pretended absolutes and origins. He turns towards concreteness and adequacy towards facts, towards action and towards power. That means the empiricist temper regnant and the rationalist temper sincerely given up. It means the open air and possibilities of nature, as against dogma, artificiality, and the pretence of finality in truth" (p. 51).

The temper of mind here described is one with which I, for my part, in the main cordially sympathize. But I think there is an impression in the mind of William James, as of some other pragmatists, that pragmatism involves a more open mind than its opposite. As regards scientific questions, or even the less important questions of philosophy, this is no doubt more or less the case. But as regards the fundamental questions of philosophy – especially as regards what I consider *the* fundamental question, namely, the nature of truth – pragmatism is absolutely dogmatic. The hypothesis that pragmatism is erroneous is not allowed to enter for the pragmatic competition; however well it may work, it is not to be entertained. To "turn your back resolutely and once for all" upon the philosophy of others may be heroic or praiseworthy, but it is not undogmatic or open-minded. A modest shrinking from self-assertion, a sense that all our theories are provisional, a constant realization that after all the hypothesis of our opponents may be the right one – these characterize the truly empirical temper, but I do not observe that they invariably characterize the writings of pragmatists. Dogmatism in fundamentals is more or less unavoidable in philosophy, and I do not blame pragmatists for what could not be otherwise; but I demur to their claim to a greater open-mindedness than is or may be possessed by their critics.

William James, however, it must be admitted, is about as little pontifical as a philosopher well can be. And his complete absence of unction is most refreshing. "In this real world of sweat and dirt," he says, "it seems to me that when a view of things is 'noble', that ought to count as a presumption against its truth and as a philosophic disqualification" (p. 72). Accordingly his contentions are never supported by 'fine writing'; he brings them into the market-place, and is not afraid to be homely, untechnical, and slangy. All this makes his books refreshing to read, and shows that they contain what he really lives by, not merely what he holds in his professional capacity.

But it is time to return to the pragmatic method.

"The pragmatic method," we are told, "is primarily a method of settling metaphysical disputes that otherwise might be interminable. Is the world one or many? – fated or free? – material or spiritual? Here are notions either of which may or may not hold good of the world; and disputes over such notions are unending. The pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it practically make to anyone if this notion rather than that notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle. Whenever a dispute is serious, we ought to be able to show some practical difference that must follow from one side or the other's being right." And again: "To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve – what sensations we are to expect from it, and what reactions we must prepare. Our

conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object, so far as that conception has positive significance at all" (pp. 45–7).

To this method, applied within limits and to suitable topics, there is no ground for objecting. On the contrary, it is wholesome to keep in touch with concrete facts, as far as possible, by remembering to bring our theories constantly into connection with them. The method, however, involves more than is stated in the extract which I quoted just now. It involves also the suggestion of the pragmatic criterion of truth: a belief is to be judged true in so far as the practical consequences of its adoption are good. Some pragmatists, for example, Le Roy (who has lately suffered Papal condemnation), regard the pragmatic test as giving *only* a criterion;[1] others, notably Dr. Schiller, regard it as giving the actual *meaning* of truth. William James agrees on this point with Dr. Schiller, though, like him, he does not enter into the question of criterion *versus* meaning.

The pragmatic theory of truth is the central doctrine of pragmatism, and we must consider it at some length. William James states it in various ways, some of which I shall now quote. He says: "Ideas (which themselves are but parts of our experience) become true just in so far as they help us to get into satisfactory relation with other parts of our experience" (p. 58). Again: "Truth is *one species of good*, and not, as is usually supposed, a category distinct from good, and coordinate with it. *The true is the name of whatever proves itself to be good in the way of belief, and good, too, for definite, assignable reasons*" (p. 75). That truth means "agreement with reality" may be said by a pragmatist as well as by anyone else, but the pragmatist differs from others as to what is meant by *agreement*, and also (it would seem) as to what is meant by *reality*. William James gives the following definition of agreement: "To 'agree' in the widest sense with a reality *can only mean to be guided either straight up to it or into its surroundings, or to be put into such working touch with it as to handle either it or something connected with it better than if we disagreed*" (p. 212). This language is rather metaphorical, and a little puzzling; it is plain, however, that 'agreement' is regarded as practical, not as merely intellectual. This emphasis on practice is, of course, one of the leading features of pragmatism.

In order to understand the pragmatic notion of truth, we have to be clear as to the basis of *fact* upon which truths are supposed to rest. Immediate sensible experience, for example, does not come under the alternative of *true* and *false*. "Day follows day," says James, "and its contents are simply added. The new contents themselves are not true, they simply *come* and *are*. Truth

[1] Cf., e.g., Le Roy, "Comment se pose le problème de Dieu," *Revue de Métaphysique et de Morale* xv 4 (July 1907), pp. 506, 507 *n.*

is *what we say about* them" (p. 62). Thus when we are merely aware of sensible objects, we are not to be regarded as knowing any truth, although we have a certain kind of contact with reality. It is important to realize that the *facts* which thus lie outside the scope of truth and falsehood supply the material which is presupposed by the pragmatic theory. Our beliefs have to agree with matters of fact: it is an essential part of their 'satisfactoriness' that they should do so. James also mentions what he calls "relations among purely mental ideas" as part of our stock-in-trade with which pragmatism starts. He mentions as instances "1 and 1 make 2," "white differs less from grey than it does from black," and so on. All such propositions as these, then, we are supposed to know for certain before we can get under way. As James puts it: "Between the coercions of the sensible order and those of the ideal order, our mind is thus wedged tightly. Our ideas must agree with realities, be such realities concrete or abstract, be they facts or be they principles, under penalty of endless inconsistency and frustration" (p. 211). Thus it is only when we pass beyond plain matters of fact and *a priori* truisms that the pragmatic notion of truth comes in. It is, in short, the notion to be applied to doubtful cases, but it is not the notion to be applied to cases about which there can be no doubt. And that there are cases about which there can be no doubt is presupposed in the very statement of the pragmatist position. "Our account of truth," James tells us, "is an account ... of processes of leading, realized *in rebus*, and having only this quality in common, that they *pay*" (p. 218). We may thus sum up the philosophy in the following definition: "A truth is anything which it pays to believe." Now, if this definition is to be useful, as pragmatism intends it to be, it must be possible to know that it pays to believe something without knowing anything that pragmatism would call a truth. Hence the knowledge that a certain belief pays must be classed as knowledge of a sensible fact or of a "relation among purely mental ideas," or as some compound of the two, and must be so easy to discover as not to be worthy of having the pragmatic test applied to it. There is, however, some difficulty in this view. Let us consider for a moment what it means to say that a belief 'pays'. We must suppose that this means that the consequences of entertaining the belief are better than those of rejecting it. In order to know this, we must know what are the consequences of entertaining it, and what are the consequences of rejecting it; we must know also what consequences are good, what bad, what consequences are better, and what worse. Take, say, belief in the Roman Catholic Faith. This, we may agree, causes a certain amount of happiness at the expense of a certain amount of stupidity and priestly domination. Such a view is disputable and disputed, but we will let that pass. But then comes the question whether, admitting the effects to be such, they are to be classed as on the whole good or on the whole bad; and this question is one which is so difficult that our test of truth becomes practically useless. It is far easier, it seems to me, to settle the plain question of fact: "Have Popes

been always infallible?" than to settle the question whether the effects of thinking them infallible are on the whole good. Yet this question, of the truth of Roman Catholicism, is just the sort of question that pragmatists consider specially suitable to their method.

The notion that it is quite easy to know when the consequences of a belief are good, so easy, in fact, that a theory of knowledge need take no account of anything so simple – this notion, I must say, seems to me one of the strangest assumptions for a theory of knowledge to make. Let us take another illustration. Many of the men of the French Revolution were disciples of Rousseau, and their belief in his doctrines had far-reaching effects, which make Europe at this day a different place from what it would have been without that belief. If, on the whole, the effects of their belief have been good, we shall have to say that their belief was true; if bad, that it was false. But how are we to strike the balance? It is almost impossible to disentangle what the effects have been; and even if we could ascertain them, our judgment as to whether they have been good or bad would depend upon our political opinions. It is surely far easier to discover by direct investigation that the *Contrat Social* is a myth than to decide whether belief in it has done harm or good on the whole.

Another difficulty which I feel in regard to the pragmatic meaning of 'truth' may be stated as follows: Suppose I accept the pragmatic criterion, and suppose you persuade me that a certain belief is useful. Suppose I thereupon conclude that the belief is true. Is it not obvious that there is a transition in my mind from seeing that the belief is useful to actually holding that the belief is true? Yet this could not be so if the pragmatic account of truth were valid. Take, say, the belief that other people exist. According to the pragmatists, to say "it is true that other people exist" *means* "it is useful to believe that other people exist." But if so, then these two phrases are merely different words for the same proposition; therefore when I believe the one I believe the other. If this were so, there could be no transition from the one to the other, as plainly there is. This shows that the word 'true' represents for us a different idea from that represented by the phrase 'useful to believe', and that, therefore, the pragmatic definition of truth ignores, without destroying, the meaning commonly given to the word 'true', which meaning, in my opinion, is of fundamental importance, and can only be ignored at the cost of hopeless inadequacy.

This brings me to the difference between *criterion* and *meaning* – a point on which neither James nor Dr. Schiller is very clear. I may best explain the difference, to begin with, by an instance. If you wish to know whether a certain book is in a library, you consult the catalogue: books mentioned in the catalogue are presumably in the library, books not mentioned in it are presumably not in the library. Thus the catalogue affords a *criterion* of whether a book is in the library or not. But even supposing the catalogue

perfect, it is obvious that when you say the book is in the library you do not *mean* that it is mentioned in the catalogue. You mean that the actual book is to be found somewhere in the shelves. It therefore remains an intelligible hypothesis that there are books in the library which are not yet catalogued, or that there are books catalogued which have been lost and are no longer in the library. And it remains an inference from the discovery that a book is mentioned in the catalogue to the conclusion that the book is in the library. Speaking abstractly, we may say that a property A is a *criterion* of a property B when the same objects possess both; and A is a *useful* criterion of B if it is easier to discover whether an object possesses the property A than whether it possesses the property B. Thus being mentioned in the catalogue is a *useful* criterion of being in the library, because it is easier to consult the catalogue than to hunt through the shelves.

Now if pragmatists only affirmed that utility is a *criterion of* truth, there would be much less to be said against their view. For there certainly seem to be few cases, if any, in which it is clearly useful to believe what is false. The chief criticism one would then have to make on pragmatism would be to deny that utility is a *useful* criterion, because it is so often harder to determine whether a belief is useful than whether it is true. The arguments of pragmatists are almost wholly directed to proving that utility is a *criterion*; that utility is the *meaning* of truth is then supposed to follow. But, to return to our illustration of the library, suppose we had conceded that there are no mistakes in the British Museum catalogue: would it follow that the catalogue would do without the books? We can imagine some person long engaged in a comparative study of libraries, and having, in the process, naturally lost all taste for reading, declaring that the catalogue is the only important thing – as for the books, they are useless lumber; no one ever wants them, and the principle of economy should lead us to be content with the catalogue. Indeed, if you consider the matter with an open mind, you will see that the catalogue is the library, for it tells you everything you can possibly wish to know about the library. Let us, then, save the taxpayers' money by destroying the books: allow free access to the catalogue, but condemn the desire to read as involving an exploded dogmatic realism.

This analogy of the library is not, to my mind, fantastic or unjust, but as close and exact an analogy as I have been able to think of. The point I am trying to make clear is concealed from pragmatists, I think, by the fact that their theories start very often from such things as the general hypotheses of science – ether, atoms, and the like. In such cases, we take little interest in the hypotheses themselves, which, as we well know, are liable to rapid change. What we care about are the inferences as to sensible phenomena which the hypotheses enable us to make. All we ask of the hypotheses is that they should 'work' – though it should be observed that what constitutes 'working' is not the general agreeableness of their results, but the conformity of these

results with observed phenomena. But in the case of these general scientific hypotheses, no sensible man believes that they are true as they stand. They are believed to be true in part, and to work because of the part that is true; but it is expected that in time some element of falsehood will be discovered, and some truer theory will be substituted. Thus pragmatism would seem to derive its notion of what constitutes belief from cases in which, properly speaking, belief is absent, and in which – what is pragmatically important – there is but a slender interest in truth or falsehood as compared to the interest in what 'works'.

But when this method is extended to cases in which the proposition in question has an emotional interest on its own account, apart from its working, the pragmatic account becomes less satisfactory. This point has been well brought out by Professor Stout in *Mind*,[2] and what I have to say is mostly contained in his remarks. Take the question whether other people exist. It seems perfectly possible to suppose that the hypothesis that they exist will always work, even if they do not in fact exist. It is plain, also, that it makes for happiness to believe that they exist — for even the greatest misanthropist would not wish to be deprived of the objects of his hate. Hence the belief that other people exist is, pragmatically, a true belief. But if I am troubled by solipsism, the discovery that a belief in the existence of others is 'true' in the pragmatist's sense is not enough to allay my sense of loneliness: the perception that I should profit by rejecting solipsism is not alone sufficient to make me reject it. For what I desire is not that the belief in solipsism should be false in the pragmatic sense, but that other people should in fact exist. And with the pragmatist's meaning of truth, these two do not necessarily go together. The belief in solipsism might be false even if I were the only person or thing in the universe.

This paradoxical consequence would, I presume, not be admitted by pragmatists. Yet it is an inevitable outcome of the divorce which they make between *fact* and *truth*. Returning to our illustration, we may say that 'facts' are represented by the books, and 'truths' by the entries in the catalogue. So long as you do not wish to read the books, the 'truths' will do in place of the 'facts', and the imperfections of your library can be remedied by simply making new entries in the catalogue. But as soon as you actually wish to read a book, the 'truths' become inadequate, and the 'facts' become all-important. The pragmatic account of truth assumes, so it seems to me, that no one takes any interest in facts, and that the truth of the proposition that your friend exists is an adequate substitute for the fact of his existence. "Facts," they tell us, are neither true nor false, therefore truth cannot be concerned with them. But the truth "A exists," if it is a truth, is concerned with A, who in that case

[2] October, 1907, pp. 586–8. This criticism occurs in the course of a very sympathetic review of Dr. Schiller's *Studies in Humanism*.

is a fact; and to say that "A exists" may be true even if A does not exist is to give a meaning to 'truth' which robs it of all interest. Dr. Schiller is fond of attacking the view that truth must correspond with reality; we may conciliate him by agreeing that *his* truth, at any rate, need not correspond with reality. But we shall have to add that reality is to us more interesting than such truth.

I am, of course, aware that pragmatists minimize the basis of 'fact', and speak of the 'making of reality' as proceeding *pari passu* with the 'making of truth'. It is easy to criticize the claim to 'make reality' except within obvious limits. But when such criticisms are met by pointing to the pragmatist's admission that, after all, there must be a basis of 'fact' for our creative activity to work upon, then the opposite line of criticism comes into play. Dr. Schiller, in his essay on 'the making of reality', minimizes the importance of the basis of 'fact', on the ground (it would seem) that 'facts' will not submit to pragmatic treatment, and that, if pragmatism is true, they are unknowable.[3] Hence, on pragmatistic principles, it is useless to think about facts. We therefore return to fictions with a sigh of relief, and soothe our scruples by calling them 'realities'. But it seems something of a *petitio principii* to condemn 'facts' because pragmatism, though it finds them necessary, is unable to deal with them. And William James, it should be said, makes less attempt than Dr. Schiller does to minimize facts. In this essay, therefore, I have considered the difficulties which pragmatism has to face if it admits 'facts' rather than those (no less serious) which it has to face if it denies them.

It is chiefly in regard to religion that the pragmatist use of 'truth' seems to me misleading. Pragmatists boast much of their ability to reconcile religion and science, and William James, as we saw, professes to have discovered a position combining the merits of tender-mindedness and tough-mindedness. The combination is really effected, if I am not mistaken, in a way of which pragmatists are not themselves thoroughly aware. For their position, if they fully realized it, would, I think, be this: "We cannot know whether, in fact, there is a God or a future life, but we can know that the belief in God and a future life is true." This position, it is to be feared, would not afford much comfort to the religious if it were understood, and I cannot but feel some sympathy with the Pope in his condemnation of it.

"On pragmatic principles," James says, "we cannot reject any hypothesis if consequences useful to life flow from it" (p. 273). He proceeds to point out that consequences useful to life flow from the hypothesis of the Absolute, which is therefore so far a true hypothesis. But it should be observed that these useful consequences flow from the hypothesis that the Absolute is a fact, not from the hypothesis that useful consequences flow from belief in the Absolute. But we cannot believe the hypothesis that the Absolute is a fact merely

[3] Cf. *Studies in Humanism*, pp. 434–6.

because we perceive that useful consequences flow from this hypothesis. What we can believe on such grounds is that this hypothesis is what pragmatists call 'true', i.e. that it is useful; but it is not from this belief that the useful consequences flow, and the grounds alleged do not make us believe that the Absolute is a fact, which is the useful belief. In other words, the useful belief is that the Absolute is a fact, and pragmatism shows that this belief is what it calls 'true'. Thus pragmatism persuades us that belief in the Absolute is 'true', but does not persuade us that the Absolute is a fact. The belief which it persuades us to adopt is therefore not the one which is useful. In ordinary logic, if the belief in the Absolute is true, it follows that the Absolute is a fact. But with the pragmatist's meaning of 'true' this does not follow; hence the proposition which he proves is not, as he thinks, the one from which comforting consequences flow.

In another place James says: "On pragmatistic principles, if the hypothesis of God works satisfactorily in the widest sense of the word, it is true" (p. 299). This proposition is, in reality, a mere tautology. For we have laid down the definition: "The word 'true' means 'working satisfactorily in the widest sense of the word'." Hence the proposition stated by James is merely a verbal variant on the following: "On pragmatistic principles, if the hypothesis of God works satisfactorily in the widest sense of the word, then it works satisfactorily in the widest sense of the word." This would hold even on other than pragmatistic principles; presumably what is peculiar to pragmatism is the belief that this is an important contribution to the philosophy of religion. The advantage of the pragmatic method is that it decides the question of the truth of the existence of God by purely mundane arguments, namely, by the effects of belief in His existence upon our life in this world. But unfortunately this gives a merely mundane conclusion, namely, that belief in God is true, i.e. useful, whereas what religion desires is the conclusion that God exists, which pragmatism never even approaches. I infer, therefore, that the pragmatic philosophy of religion, like most philosophies whose conclusions are interesting, turns on an unconscious play upon words. A common word – in this case, the word 'true' – is taken at the outset in an uncommon sense, but as the argument proceeds, the usual sense of the word gradually slips back, and the conclusions arrived at seem, therefore, quite different from what they would be seen to be if the initial definition had been remembered.

The point is, of course, that, so soon as it is admitted that there are things that exist, it is impossible to avoid recognizing a distinction, to which we may give what name we please, between believing in the existence of something that exists and believing in the existence of something that does not exist. It is common to call the one belief true, the other false. But if, with the pragmatists, we prefer to give a different meaning to the words 'true' and 'false', that does not prevent the distinction commonly called the distinction of 'true' and 'false' from persisting. The pragmatist attempt to ignore this distinction fails,

as it seems to me, because a basis of fact cannot be avoided by pragmatism, and this basis of fact demands the *usual* antithesis of 'true' and 'false'. It is hardly to be supposed that pragmatists will admit this conclusion. But it may be hoped that they will tell us in more detail how they propose to avoid it.

Pragmatism, if I have not misunderstood it, is largely a generalization from the procedure of the inductive sciences. In so far as it lays stress upon the importance of induction, I find myself in agreement with it; and as to the nature of induction also, I think it is far more nearly right than are most of the traditional accounts. But on fundamental questions of philosophy I find myself wholly opposed to it, and unable to see that inductive procedure gives any warrant for its conclusions. To make this clear, I will very briefly explain how I conceive the nature and scope of induction.

When we survey our beliefs, we find that we hold different beliefs with very different degrees of conviction. Some – such as the belief that I am sitting in a chair, or that 2 +2 =4 – can be doubted by few except those who have had a long training in philosophy. Such beliefs are held so firmly that non-philosophers who deny them are put into lunatic asylums. Other beliefs, such as the facts of history, are held rather less firmly, but still in the main without much doubt where they are well authenticated. Beliefs about the future, as that the sun will rise tomorrow and that the trains will run approximately as in Bradshaw, may be held with almost as great conviction as beliefs about the past. Scientific laws are generally believed less firmly, and there is a gradation among them from such as seem nearly certain to such as have only a slight probability in their favour. Philosophical beliefs, finally, will, with most people, take a still lower place, since the opposite beliefs of others can hardly fail to induce doubt. Belief, therefore, is a matter of degree. To speak of belief, disbelief, doubt, and suspense of judgment as the only possibilities is as if, from the writing on the thermometer, we were to suppose that blood heat, summer heat, temperate, and freezing were the only temperatures. There is a continuous gradation in belief, and the more firmly we believe anything, the less willing we are to abandon it in case of conflict.

Besides the degree of our belief, there is another important respect in which a belief may vary, namely, in the extent to which it is *spontaneous* or *derivative*. A belief obtained by inference may be called *derivative*; one not so obtained, *spontaneous*. When we do not need any outside evidence to make us entertain a belief, we may say that what we believe is *obvious*. Our belief in the existence of sensible objects is of this nature: "seeing is believing," and we demand no further evidence. The same applies to certain logical principles, e.g. that whatever follows from a true proposition must be true. A proposition may be obvious in very varying degrees. For example, in matters of aesthetic taste we have to judge immediately whether a work of art is beautiful or not, but the degree of obviousness involved is probably small, so that we feel no very great confidence in our judgment. Thus our spontaneous beliefs are not

necessarily stronger than derivative beliefs. Moreover, few beliefs, if any, are *wholly* spontaneous in an educated man. The more a man has organized his knowledge, the more his beliefs will be interdependent, and the more will obvious truths be reinforced by their connection with other obvious truths. In spite of this fact, however, obviousness remains always the ultimate source of our beliefs; for what is called verification or deduction consists always in being brought into relation with one or more obvious propositions. This process of verification is necessary even for propositions which seem obvious, since it appears on examination that two apparently obvious propositions may be inconsistent, and hence that apparent obviousness is not a sufficient guarantee of truth. We therefore have to subject our beliefs to a process of organization, making groups of such as are mutually consistent, and when two such groups are not consistent with each other, selecting that group which seems to us to contain the most evidence, account being taken both of the degree of obviousness of the propositions it contains and of the number of such propositions. It is as the result of such a process, for example, that we are led, if we are led, to conclude that colours are not objective properties of things. Induction, in a broad sense, may be described as the process of selecting hypotheses which will organize our spontaneous beliefs, preserving as many of them as possible, and interconnecting them by general propositions which, as is said, 'explain' them, i.e. give a ground from which they can be deduced. In this sense, all knowledge is inductive as soon as it is reflective and organized. In any science, there is a greater or less degree of obviousness about many of its propositions: those that are obvious are called *data*; other propositions are only accepted because of their connection with the data. This connection itself may be of two kinds, either that the propositions in question can be deduced from the data, or that the data can be deduced from the propositions in question, and we know of no way of deducing the data without assuming the propositions in question. The latter is the case of working hypotheses, which covers all the general laws of science and all the metaphysics both of common sense and of professed philosophy. It is, apparently, by generalizing the conception of 'working hypothesis' that pragmatism has arisen. But three points seem to me to have been overlooked in this generalization. First, working hypotheses are only a small part of our beliefs, not the whole, as pragmatism seems to think. Secondly, prudent people give only a low degree of belief to working hypotheses; it is therefore a curious procedure to select them as the very types of beliefs in general. Thirdly, pragmatism seems to confound two very different conceptions of 'working'. When *science* says that a hypothesis works, it means that from this hypothesis we can deduce a number of propositions which are verifiable, i.e. obvious under suitable circumstances, and that we cannot deduce any propositions of which the contradictories are verifiable. But when *pragmatism* says that a hypothesis works, it means that the effects of believing it are good, including

among the effects not only the beliefs which we deduce from it, but also the emotions entailed by it or its perceived consequences, and the actions to which we are prompted by it or its perceived consequences. This is a totally difference conception of 'working', and one for which the authority of scientific procedure cannot be invoked. I infer, therefore, that induction, rightly analysed, does not lead us to pragmatism, and that the inductive results which pragmatism takes as the very type of truth are precisely those among our beliefs which should be held with most caution and least conviction.

To sum up: while agreeing with the empirical temper of pragmatism, with its readiness to treat all philosophical tenets as 'working hypotheses', we cannot agree that when we say a belief is true we mean that it is a hypothesis which 'works', especially if we mean by this to take account of the excellence of its effects, and not merely of the truth of its consequences. If, to avoid disputes about words, we agree to accept the pragmatic definition of the word 'truth', we find that the belief that A exists may be 'true' even when A does not exist. This shows that the conclusions arrived at by pragmatism in the sphere of religion do not have the meaning which they appear to have, and are incapable, when rightly understood, of yielding us the satisfaction which they promise. The attempt to get rid of 'fact' turns out to be a failure, and thus the old notion of truth reappears. And if the pragmatist states that utility is to be merely a *criterion* of truth, we shall reply first, that it is not a useful criterion, because it is usually harder to discover whether a belief is useful than whether it is true; secondly, that since no *a priori* reason is shown why truth and utility should always go together, utility can only be shown to be a criterion at all by showing inductively that it accompanies truth in all known instances, which requires that we should already know in many instances what things are true. Finally, therefore, the pragmatist theory of truth is to be condemned on the ground that it does not 'work'.

JAMES AS A PHILOSOPHER

Josiah Royce. "James as a Philosopher." *Science* n.s. 34.863 (14 July 1911): 33–45.

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Fifty years since, if competent judges were asked to name the American thinkers from whom there had come novel and notable and typical contributions to general philosophy, they could in reply mention only two men – Jonathan Edwards and Ralph Waldo Emerson. For the conditions that determine a fair answer to the question, "Who are your representative American philosophers?" are obvious. The philosopher who can fitly represent the contribution of his nation to the world's treasury of philosophical ideas, must first be one who thinks for himself, fruitfully, with true independence, and with successful inventiveness, about problems of philosophy. And, secondly, he must be a man who gives utterance to philosophical ideas which are characteristic of some stage and of some aspect of the spiritual life of his own people. In Edwards and in Emerson, and only in these men, had these two conditions found their fulfilment, so far as our American civilization had yet expressed itself in the years that had preceded our civil war. Edwards, in his day, made articulate some of the great interests that had moulded our early religious life. The thoughts which he most discussed were indeed, in a sense, old, since they largely concerned a traditional theology. Yet both in theology and general philosophy, Edwards was an originator. For he actually rediscovered some of the world's profoundest ideas regarding God and humanity simply by reading for himself the meaning of his own religious experience. With a mysterious power of philosophical intuition, even in his early youth, he observed what, upon the basis of what we know to have been his range of philosophical reading, we could not possibly have expected him to observe. If the sectarian theological creed that he defended was to our minds narrow, what he himself saw was very far-reaching and profound. For he viewed religious problems with synoptic vision that enabled him to reconcile, in his own personal way, some of the greatest and most tragic conflicts of the spiritual world, and what he had to say consequently far transcended the interests of the special theological issues which he discussed. Meanwhile, he spoke not merely as a thinker, but as one

who gave voice to some of the central motives and interests of our colonial religious life. Therefore he was, in order of time the first of our nationally representative philosophers.

Another stage of our civilization – a later phase of our national ideals – found its representative in Emerson. He too was in close touch with many of the world's deepest thoughts concerning ultimate problems. Some of the ideas that most influenced him have their far-off historical origins in oriental as well as in Greek thought, and also their nearer foreign sources in modern European philosophy. But he transformed whatever he assimilated. He invented upon the basis of his personal experience, and so he was himself no disciple of the orient, or of Greece, still less of England and of Germany. He thought, felt and spoke as an American.

Fifty years ago, I say, our nation had so far found these two men to express each his own stage of the philosophy of our national civilization. The essence of a philosophy, in case you look at it solely from a historical point of view, always appears to you thus: A great philosophy expresses an interpretation of the life of man and a view of the universe, which is at once personal, and if the thinker is representative of his people, national in its significance. Edwards and Emerson had given tongue to the meaning of two different stages of our American culture. And these were thus far our only philosophical voices.

To-day, if we ask any competent foreign critic of our philosophy whether there is any other name to be added to these two classic American philosophers, we shall receive the unanimous answer: "There is today a third representative American philosopher. His name is William James." For James meets the two conditions just mentioned. He has thought for himself, fruitfully, with true independence, and with successful inventiveness. And he has given utterance to ideas which are characteristic of a stage of an aspect of the spiritual life of this people. He, too, has been widely and deeply affected by the history of thought. But he has reinterpreted all these historical influences in his own personal way. He has transformed whatever he has assimilated. He has rediscovered whatever he has received from without; because he never could teach what he had not himself experienced. And, in addition, he has indeed invented effectively and richly. Moreover, in him certain characteristic aspects of our national civilization have found their voice. He is thus the third in the order of time among our representative American philosophers. Already, within a year of his death, he has begun to acquire something of a classic rank and dignity. In future this rank and dignity will long increase. In one of James's latest utterances he indeed expressed, with characteristic energy, a certain abhorrence of what he called classical tendencies in philosophical thought. But I must repeat the word: Fortune not unjustly replies, and will reply to James's vigorous protest against every form of classicism, by making him a classic.

Thus, then, from the point of view of the competent foreign students of our philosophy, the representative American philosophers are now three and only three – Edwards, Emerson, James.

And of these three there can be little question that, at the present time, the most widely known abroad is James. Emerson has indeed found a secure place in the minds of the English-speaking lovers of his type of thought everywhere; and has had an important part in the growth of some modern German tendencies. But James has already won, in the minds of French, of German, of Italian, and of still other groups of foreign readers, a position which gives him a much more extended range of present influence than Emerson has ever possessed.

It is my purpose, upon the present occasion, to make a few comments upon the significance of William James's philosophy. This is no place for the discussion of technical matters. Least of all have I any wish to undertake to decide, upon this occasion, any controversial issues. My intentions as I address you are determined by very simply and obvious considerations. William James was my friend from my youth to the end of his beneficent life. I was once for a brief time his pupil. I long loved to think of myself as his disciple; although perhaps I was always a very bad disciple. But now he has just left us. And as I address you I remember that he was your friend also. Since the last annual meeting of this assembly he has been lost to us all. It is fitting that we should recall his memory to-day. Of personal reminiscences, of biographical sketches, and of discussions relating to many details of his philosophy, the literature that has gathered about his name during the few months since we lost him, has been very full. But just as this is no occasion for technical discussion of his philosophy so too I think this is no place to add new items to the literature of purely personal reminiscence and estimate of James. What I shall try to do is this: I have said that James is an American philosopher of classic rank, because he stands for a stage in our national self-consciousness – for a stage with which historians of our national mind must always reckon. This statement, if you will permit, shall be my text. I shall devote myself to expounding this text as well as I can in my brief time, and to estimating the significance of the stage in question, and of James's thought in so far as it seems to me to express the ideas and the ideals characteristic of this phase of our national life.

I

In defining the historical position which William James, as a thinker, occupies, we have of course to take account, not only of national tendencies, but also of the general interests of the world's thought in his time. William James began his work as a philosopher, during the seventies of the last century, in years which were, for our present purpose, characterized by two

notable movements of world-wide significance. These two movements were at once scientific in the more special sense of that term, and philosophical in the broad meaning of that word. The first of the movements was concerned with the elaboration – the widening and the deepening of the newer doctrines about evolution. This movement had indeed been preceded by another. The recent forms of evolutionary doctrine, those associated with the names of Darwin and of Spencer, had begun rapidly to come into prominence about 1860. And the decade from 1860 to 1870, taken together with the opening years of the next decade, had constituted what you may call the storm and stress period of Darwinism, and of its allied tendencies, such as those which Spencer represented. In those years the younger defenders of the new doctrines so far as they appealed to the general public, fought their battles, declared their faith, out of weakness were made strong and put to flight the armies of the theologians. You might name, as a closing event of that storm and stress period, Tyndall's famous Belfast address of 1874, and the warfare waged about that address. Haeckel's early works, some of Huxley's most noted polemic essays, Lange's "History of Materialism," the first eight or nine editions of Von Hartmann's "Philosophy of the Unconscious," are documents characteristic of the more general philosophical interests of that time. In our country, Fiske's "Cosmic Philosophy" reflected some of the notable features that belonged to these years of the early conquests of evolutionary opinion.

Now in that storm and stress period, James had not yet been before the public. But his published philosophical work began with the outset of the second and more important period of evolutionary thought – the period of the widening and deepening of the new ideas. The leaders of thought who are characteristic of this second period no longer spend their best efforts in polemic in favor of the main ideas of the newer forms of the doctrine of evolution. In certain of its main outlines – outlines now extremely familiar to the public – they simply accept the notion of the natural origin of organic forms and of the general continuity of the processes of development. But they are concerned, more and more, as time goes on, with the deeper meaning of evolution, with the study of its factors, with the application of the new ideas to more and more fields of inquiry, and, in case they are philosophers, with the reinterpretation of philosophical traditions in the light of what had resulted from that time of storm and stress.

James belongs to this great second stage of the evolutionary movement, to the movement of the elaboration, of the widening and deepening of evolutionary thought, as opposed to that early period of the storm and stress. We still live in this second stage of evolutionary movement. James is one of its most inventive philosophical representatives. He hardly ever took part in the polemic in favor of the general evolutionary ideas. Accepting them, he undertook to interpret and apply them.

And now, secondly, the period of James's activity is the period of the rise of the new psychology. The new psychology has stood for many other interests besides those of a technical study of the special sciences of the human and of the animal mind. What is technical about psychology is indeed important enough. But the special scientific study of mind by the modern methods used in such study has been a phase and a symptom of a very much larger movement – a movement closely connected with all that is most vital in recent civilization, with all the modern forms of nationalism, of internationalism, of socialism, and of individualism. Human life has been complicated by so many new personal and social problems, that man has needed to aim, by whatever means are possible, towards a much more elaborate knowledge of his fellow-man than was ever possible before. The results of this disposition appear in the most widely diverse sciences and arts. Archeology and ethnology, history and the various social sciences, dramatic art, the novel, as well as what has been called psychical research – in a word, all means, good and bad, that have promised either a better knowledge of what man is or a better way of portraying what knowledge of man one may possess – have been tried and moulded in recent times by the spirit of which recent technical psychology is also an expression. The psychological movement means then something that far transcends the interests of the group of sciences to which the name psychology now applies. And this movement assumed some of its most important recent forms during the decade in which James began to publish his work. His own contributions to psychology reflect something of the manifoldness and of the breadth of the general psychological movement itself. If he published the two great volumes entitled "Psychology" he also wrote "The Varieties of Religious Experience," and he played his part in what is called "psychical research."

These then are James's two principal offices when you consider him merely in his most general relations to the thought of the world at large in his time. He helped in the work of elaborating and interpreting evolutionary thought. He took a commanding part in the psychological movement.

II

But now it is not of these aspects of James's work, significant as they are, that I have here especially to speak. I must indeed thus name and emphasize these wider relations of this thought to the world's contemporary thought. But I do so in order to give the fitting frame to our picture. I now have to call attention to the features about James which make him, with all his universality of interest, a representative American thinker. Viewed as an American, he belongs to the movement which has been the consequences first, of our civil war, and secondly, of the recent expansion, enrichment, and entanglement of our social life. He belongs to the age in which our nation, rapidly transformed

by the occupation of new territory, by economic growth, by immigration and by education, has been attempting to find itself anew, to redefine its ideals, to retain its moral integrity, and yet to become a world power. In this stage of our national consciousness we still live and shall plainly have to live for a long time in the future. The problems involved in such a civilization we none of us well understand; least of all do I myself understand them. And James, scholar, thinker, teacher, scientific and philosophical writer as he was, has of course only such relation to our national movement as is implied by the office that he thus fulfills. Although he followed with keen interest a great variety of political and social controversies, he avoided public life. Hence he was not absorbed by the world of affairs, although he was always ready to engage generously in the discussion of practical reforms. His main office with regard to such matters was therefore that of philosophical interpreter. He helped to enlighten his fellows as to the relations between the practical problems of our civilization and those two world-wide movements of thought of which I have just spoken.

Let me call attention to some of the results of James's work as interpreter of the problems of the American people. I need not say that this work was, to his own mind, mainly incidental to his interest in those problems of evolutionary thought and of psychology to which I just directed your attention. I am sure that James himself was very little conscious that he was indeed an especially representative American philosopher. He certainly had no ambition to vaunt himself as such. He worked with a beautiful and hearty sincerity upon the problems that as a fact interested him. He knew that he loved these problems because of their intense human interest. He knew, then, that he was indeed laboring in the service of mankind. But he so loved what he called the concrete, the particular, the individual, that he naturally made little attempt to define his office in terms of any social organism, or of any such object as our national life, viewed as an entity. And he especially disliked to talk of causes in the abstract, or of social movements as I am here characterizing them. His world seemed to him to be made up of individuals – men, events, experiences and deeds. And he always very little knew how important he himself was, or what vast inarticulate social forces were finding in him their voice. But we are now viewing James from without, in a way that is of course as imperfect as it is inevitable. We therefore have a right at this point to attribute to him an office that, as I believe, he never attributed to himself.

And here we have to speak first of James's treatment of religious problems, and then of his attitude towards ethics.

Our nation since the civil war has largely lost touch with the older forms of its own religious life. It has been seeking for new embodiments of the religious consciousness, for creeds that shall not be in conflict with the modern man's view of life. It was James's office, as psychologist, and as philosopher, to give a novel expression to this our own national variety of the

spirit of religious unrest. And his volume "The Varieties of Religious Experience," is one that, indeed, with all its wealth of illustration, and in its courageous enterprise, has a certain classic beauty. Some men preach new ways of salvation. James simply portrayed the meaning that the old ways of salvation had possessed, or still do possess, in the inner and personal experience of those individuals whom he has called the religious geniuses. And then he undertook to suggest an hypothesis as to what the whole religious process might mean. The hypothesis is on the one hand in touch with certain tendencies of recent psychology. And in so far it seems in harmony with the modern consciousness. On the other hand it expresses, in a way, James's whole philosophy of life. And in this respect it comes into touch with all the central problems of humanity.

The result of this portrayal was indeed magical. The psychologists were aided towards a new tolerance in their study of religion. The evolution of religion appeared in a new light. And meanwhile many of the faithful, who had long been disheartened by the later forms of evolutionary naturalism, took heart anew when they read James's vigorous appeal to the religious experience of the individual as to the most authoritative evidence for religion. "The most modern of thinkers, the evolutionist, the psychologist," they said, "the heir of all the ages, has thus vindicated anew the witness of the spirit in the heart – the very source of inspiration in which we ourselves have always believed." And such readers went away rejoicing, and some of them even began to write christologies abased upon the doctrine of James as they understood it. The new gospel, the glad tidings of the subconscious, began to be preached in many lands. It has even received the signal honor of an official papal condemnation.

For my own part, I have ventured to say elsewhere that the new doctrine, viewed in one aspect, seems to leave religion in the comparatively trivial position of a play with whimsical powers – a prey to endless psychological caprices. But James's own robust faith was that the very caprices of the spirit are the opportunity for the building-up of the highest forms of the spiritual life, that the unconventional and the individual in religious experience are the means whereby the truth of a superhuman world may become most manifest. And this robust faith of James, I say, whatever you may think of its merits, is as American in type as it has already proved effective in the expression which James gave to it. It is the spirit of the frontiersman, of the gold seeker, or the home builder, transferred to the metaphysical and to the religious realm. There is our far-off home, our long-lost spiritual fortune. Experience alone can guide us towards the place where these things are; hence you indeed need experience. You can only win your way on the frontier in case you are willing to live there. Be, therefore, concrete, be fearless, and be experimental. But, above all, let not your abstract conceptions, even if you call them scientific conceptions, pretend to set any limits to the richness of spiritual grace,

to the glories of spiritual possession, that, in case you are duly favored, your personal experience may reveal to you. James reckons that the tribulations with which abstract scientific theories have beset our present age are not to be compared with the glory that perchance shall be, if only we open our eyes to what experience itself has to reveal to us.

In the quest for the witness to whom James appeals when he tests his religious doctrine, he indeed searches the most varied literature; and of course most of the records that he consults belong to foreign lands. But the book called "The Varieties of Religious Experience" is full of the spirit that, in our country, has long been effective in the formation of new religious sects; and this volume expresses, better than any sectarian could express, the recent efforts of this spirit to come to an understanding with modern naturalism, and with the new psychology. James's view of religious experience is meanwhile at once deliberately unconventional and intensely democratic. The old world types of reverence for the external forms of the church find no place in his pages; but equally foreign to his mind is that barren hostility of the typical European free thinkers for the church with whose traditions they have broken. In James's eyes, the forms, the external organizations of the religious world simply wither; it is the individual that is more and more. And James, with a democratic contempt for social appearances, seeks his religious geniuses everywhere. World-renowned saints of the historic church receive his hearty sympathy; but they stand upon an equal footing, in his esteem, with many an obscure and ignorant revivalist, with faith healers, with poets, with sages, with heretics, with men that wander about in all sorts of sheepskins and goatskins, with chance correspondents of his own, with whomsoever you will of whom the world was not and is not worthy, but who, by inner experience, have obtained the substance of things hoped for, the evidence of things not seen.

You see, of course, that I do not believe James's resulting philosophy of religion to be adequate. For as it stands it is indeed chaotic. But I am sure that is can only be amended by taking it up into a larger view, and not by rejecting it. The spirit triumphs, not by destroying the chaos that James describes, but by brooding upon the face of the deep until the light comes, and with light, order. But I am sure also that we shall always have to reckon with James's view. And I am sure also that only an American thinker could have written this survey, with all its unconventional ardor of appreciation, with all its democratic catholicity of sympathy, with all its freedom both from ecclesiastical formality and from barren free thinking. I am sure also that no book has better expressed the whole spirit of hopeful unrest, of eagerness to be just to the modern view of life, of longing for new experience, which characterizes the recent American religious movement. In James's book then the deeper spirit of our national religious life has found its most manifold and characteristic expression.

III

I must next turn to the other of the two aspects of James's work as a thinker that I mentioned above, namely to his ethical influence. Since the war our transformed and restless people has been seeking not only for religious, but for moral guidance. What are the principles that can show us the course to follow in the often pathless wilderness of the new democracy? It frequently seems as if, in every crisis of our greater social affairs we needed somebody to tell us both our dream and the interpretation thereof. We are eager to have life, and that abundantly. But what life? And by what test shall we know the way of life?

The ethical maxims that most readily meet the popular demand for guidance in such a country, and at such a time, are maxims that combine attractive vagueness with an equally winning pungency. They must seem obviously practical; but must not appear excessively rigorous. They must arouse a large enthusiasm for action, without baffling us with the sense of restraint, or of wearisome self-control. They must not call for extended reflection. Despite their vagueness they must not appear abstract, nor yet hard to grasp. The wayfaring man, though a fool, must be sure that he at least will not err in applying our moral law. Moral blunders must be natural only to opponents, not to ourselves. We must be self-confident. Moreover, our moral law must have an athletic sound. Its first office is to make us "good sports." Only upon such a law can we mediate day and night, in case the "game" leaves us indeed any time for meditation at all. Nevertheless, these popular maxims will of course not be meant as mere expressions of blind impulse. On the contrary, they will appeal to highly intelligent minds, but to minds anxious for relief from the responsibility of being too thoughtful. In order to be easily popular they must be maxims that stir the heart, not precisely indeed like the sound of a trumpet, but more like the call of the horn of an automobile. You will have in mind the watchwords that express some of the popular ethical counsels thus suggested. One of these watchwords has of late enabled us to abbreviate a well-known and surely a highly intelligent maxim, to something that is to-day used almost as a mere injection. It is the watchword, "Efficiency"! Another expression of the same motive takes shape in the equally familiar advice, "Play the game."

Now I do not mean to make light of the real significance of just such moral maxims, for awakening and inspiring just our people in this day. The true value of these maxims lies for us in three of their characteristic features. First, they give us counsel that is in any case opposed to sloth. And sloth on every level of our development remains one of the most treacherous and mortal enemies of the moral will. Secondly, they teach us to avoid the dangers to which the souls of Hamlet's type fall a prey. That is, they discourage the spirit that reflectively divides the inner self, and that leaves it divided. They warn us that the divided self is indeed, unless it can heal its deadly wound, by fitting

action, a lost soul. And thirdly, they emphasize courage. And courage – not, to be sure, so much the courage that faces one's rivals in the market place, or one's foes on the battlefield as the courage that fits us to meet our true spiritual enemies – the courage that arises anew from despair and that undertakes, despite all tribulations, to overcome the world – such courage is one of the central treasures of the moral life.

Because of these three features, the maxims to which I refer are in all their vagueness, vehicles of wisdom. But they express themselves in their most popular forms with a wilfulness that is often more or less comic, and that is sometimes tragic. For what they do not emphasize is the significance of self-possession, of lifting up our eyes to the hills whence cometh our help, of testing the life that now is by the vision of the largest life that we can in ideal appreciate. These popular maxims also emphasize results rather than ideals, strength rather than cultivation, temporary success rather than wholeness of life, the greatness of "Him that taketh a city," rather than of "Him that ruleth his spirit." They are the maxims of unrest, of impatience and of certain humane and generous unscrupulousness, as fascinating as it is dangerous. They characterize a people that is indeed earnestly determined to find itself, but that so far has not found itself.

Now one of the most momentous problems regarding the influence of James is presented by the question: How did he stand related to these recent ethical tendencies of our nation? I may say at once that, in my opinion, he has just here proved himself to be most of all and in the best sense our national philosopher. For the philosopher must not be an echo. He must interpret. He must know us better than we know ourselves, and this is what indeed James has done for our American moral consciousness. For, first, while he indeed made very little of the formal office of an ethical teacher and seldom wrote upon technical ethical controversies, he was, as a fact, profoundly ethical in his whole influence. And next, he fully understood, yes shared in a rich measure, the motives to which the ethical maxims just summarized have given expression. Was not he himself restlessly active in his whole temperament? Did he not love individual enterprise and its free expression? Did he not loathe what seemed to him abstractions? Did he not insist that the moralist must be in close touch with concrete life? As psychologist did he not emphasize the fact that the very essence of conscious life lies in its active, yes, in its creative relation to experience? Did he not counsel the strenuous attitude towards our tasks? And are not all these features in harmony with the spirit from which the athletic type of morality just sketched seems to have sprung?

Not only is all this true of James, but, in the popular opinion of the moment, the doctrine called pragmatism, as he expounded it in his Lowell lectures, seems, to many of his foreign critics, and to some of those who think themselves his best followers here at home, a doctrine primarily ethical in its force, while, to some minds, pragmatism seems also to be a sort of philo-

sophical generalization of the efficiency doctrine just mentioned. To be sure, any closer reader of James's "Pragmatism" ought to see that his true interests in the philosophy of life are far deeper than those which the maxims "Be efficient," and, "Play the game" most emphasize. And, for the rest, the book on pragmatism is explicitly the portrayal of a method of philosophical inquiry, and is only incidentally a discourse upon ethically interesting matters. James himself used to protest vigorously against the readers who ventured to require of the pragmatist viewed simply as such, any one ethical doctrine whatever. In his book on "Pragmatism" he had expounded, as he often said, a method of philosophizing, a definition of truth, a criterion for interpreting and testing theories. He was not there concerned with ethics. A pragmatist was free to decide moral issues as he chose, so long as he used the pragmatic method in doing so, that is, so long as he tested ethical doctrines by their concrete results, when they were applied to life.

Inevitably, however, the pragmatic doctrine that both the meaning and the truth of ideas shall be tested by their empirical consequences of these ideas and by the practical results of acting them out in life, has seemed both to many of James's original hearers, and to some of the foreign critics just mentioned, a doctrine that is simply a characteristic Americanism in philosophy – a tendency to judge all ideals by their practical efficiency, by their visible results, by their so-called "cash values."

James, as I have said, earnestly protested against this cruder interpretation of his teaching. The author of "The Varieties of Religious Experience" and of the "Pluralistic Universe" was indeed an empiricist, a lover of the concrete and a man who looked forward to the future rather than backward to the past; but despite his own use, in his "Pragmatism" of the famous metaphor of the "cash values" of ideas, he was certainly not a thinker who had set his affections upon things below rather than upon things above. And the "consequences" upon which he laid stress when he talked of the pragmatic test for ideas, were certainly not the merely worldly consequences of such ideas in the usual sense of the word "worldly." He appealed always to experience; but then for him, experience might be, and sometimes was, religious experience – experience of the unseen and of the super-human. And so James was right in his protest against these critics of his later doctrine. His form of pragmatism was indeed a form of Americanism in philosophy. And he too had his fondness for what he regarded as efficiency, and for those who "play the game," whenever the game was one that he honored. But he also loved too much those who are weak in the eyes of this present world – the religious geniuses, the unpopular inquirers, the noble outcasts. He loved them, I say, too much to be the dupe of the cruder forms of our now popular efficiency doctrine. In order to win James's most enthusiastic support, ideas and men needed to express an intense inner experience along with a certain unpopularity which showed that they deserved sympathy. Too much worldly success,

on the part of men or of ideas, easily alienated him. Unworldliness was one of the surest marks, in his eyes, of spiritual power, if only such unworldliness seemed to him to be joined with interests that, using his favorite words, he could call "concrete" and "important."

In light of such facts, all that he said about judging ideas by their "consequences" must be interpreted, and therefore it is indeed unjust to confound pragmatism with the cruder worship of efficiency.

IV

Yet, I repeat, James's philosophy of life was indeed, in its ethical aspects, an expression of the better spirit of our people. He understood, he shared, and he also transcended the American spirit. And just that is what most marks him as our national philosopher. If you want to estimate his philosophy of life in its best form, you must read or re-read, not the "Pragmatism," but the essays contained in the volume entitled "The Will to Believe."

May I still venture, as I close, to mention a few features of the doctrine that is embodied in that volume? The main question repeatedly considered in these essays of James is explicitly the question of an empiricist, of a man averse to abstractions, and of an essentially democratic thinker, who does not believe that any final formulation of an ideal of human life is possible until the last man has had his experience of life, and has uttered his word. But this empiricism of the author is meanwhile the empiricism of one who especially emphasizes the central importance of the active life as the basis of our interpretation of experience. Herein James differs from all traditional positivists. Experience is never yours merely as it comes to you. Facts are never mere data. They are data to which you respond. Your experience is constantly transformed by your deeds. That this should be the case is determined by the most essential characteristics of your consciousness. James asserts this latter thesis as psychologist, and has behind him, as he writes, the vast mass of evidence that his two psychological volumes present. The simplest perception, the most elaborate scientific theory, illustrate how man never merely finds, but also always cooperates in creating his world.

No doubt then life must be estimated and guided with constant reference to experience, to consequences, to actual accomplishments, to what we Americans now call efficiency. But on the other hand efficiency itself is not to be estimated in terms of mere data. Our estimate of our world is not to be forced upon us by any mere inspection of consequences. What makes life worth living is not what you find in it, but what you are ready to put into it by your ideal interpretation of the meaning that, as you insist, it shall possess for you. This ideal meaning is always for you a matter of faith not to be imposed coercively upon another, but also never to be discovered by watching who it is that wins, or by merely feeling your present worldly strength as a

player of the game. Your deeper ideals always depend upon viewing life in the light of larger unities than now appear, upon viewing yourself as a co-worker with the universe for the attainment of what no present human game of action can now reveal. For this "radical empiricist" then present experience always points beyond itself to a realm that no human eye has yet seen – an empirical realm of course, but one that you have a right to interpret in terms of a faith that is itself active, but that is not merely worldly and athletic. The philosophy of action thus so imperfectly suggested by the few phrases that I have time to use, can best be interpreted, for the moment, by observing that the influence of Carlyle in many passages of this volume is as obvious as it is by our author independently reinterpreted and transformed. Imagine Carlyle transformed into a representative American thinker, trained as a naturalist, deeply versed in psychology, deprived of his disposition to hatred, open-minded towards the interests of all sorts and conditions of men, still a hero worshiper, but one whose heroes could be found in the obscurest lovers of the ideal as easily as in the most renowned historical characters; let this transformed Carlyle preach the doctrine of the resolute spirit triumphant through creative action, defiant of every degree of mortal suffering. Let him proclaim "The Everlasting Yea" in the face of all the doubts of erring human opinion: and herewith you gain some general impression of the relations that exist between "Sartor Resartus" and "The Will to Believe."

The ethical maxims which are scattered through these pages voluntarily share much of the vagueness of our age of tentative ethical effort. But they certainly are not the maxims of an impressionist, of a romanticist, or of a partisan of merely worldly efficiency. They win their way through all such attitudes to something beyond – to a resolute interpretation of human life as an opportunity to cooperate with the superhuman and the divine. And they do this, in the author's opinion, not by destroying, but by fulfilling the purposes and methods of the sciences of experience themselves. Is not every scientific theory a conceptual reinterpretation of our fragmentary perceptions, an active reconstruction, to be tried in the service of a larger life? Is not our trust in a scientific theory a conceptual reinterpretation of our fragmentary perceptions, an active reconstruction, to be tried in the service of a larger life? Is not our trust in a scientific theory itself an act of faith? Moreover, these ethical maxims are here governed, in James's exposition, by the repeated recognition of certain essentially absolute truths, truths that, despite his natural horror of absolutism, he here expounds with a finished dialectic skill that he himself, especially in his later polemic period, never seemed to prize at its full value. The need of active faith in the unseen and the superhuman he founds upon these simply and yet absolutely true principles, principles of the true dialectics of life: First, every great decision of practical life requires faith, and has irrevocable consequences, consequences that belong to the whole great world, and that therefore have endless possible importance.

Secondly, since action and belief are thus inseparably bound together, our right to believe depends upon our right, as active begins, to make decisions. Thirdly, our duty to decide life's greater issues is determined by the absolute truth that, in critical cases, the will to be doubtful and not to decide life's greater issues is determined by the absolute truth that, in critical cases, the will to be doubtful and not to decide, is itself a decision, and is hence no escape from our responsible moral position. And this our responsible position is a position that gives us our place in and for all future life. The world needs our deeds. We need to interpret the world in order to act. We have a right to interpret the universe so as to enable us to act at once decisively, courageously and with the sense of the inestimable preciousness and responsibility of the power to act.

In consequence of all these features of his ethical doctrine a wonderful sense of the deep seriousness and of the possibly divine significance of every deed is felt in James's every ethical counsel. Thus it is that while fully comprehending the American spirit which we have sketched, he at once expresses it and transforms it. He never loved Fichte; but there is much of the best of the ethical idealism of Fichte in "The Will to Believe." Many of you have enjoyed James's delightfully skilful polemic against Hegel, and against the external forms, phrases and appearances of the later constructive idealists. I have no wish here to attempt to comment upon that polemic; but I can assure you that I myself learned a great part of my own form of absolute idealism from the earliest expressions that James gave to the thoughts contained in "The Will to Believe." As one of his latest works, "The Pluralistic Universe," still further showed, he himself was in spirit an ethical idealist to the core. Nor was he nearly so far in spirit even from Hegel as he supposed, guiltless as he was of Hegel's categories. Let a careful reading of the "Pluralistic Universe" make this fact manifest.

Meanwhile, what interests us is that, in "The Will to Believe," as well as in "The Pluralistic Universe," this beautifully manifold, appreciative and humane mind, at once adequately expressed, and, with true moral idealism transcended the caprices of recent American ethics. To this end he lavishly used the resources of the naturalist, of the humanist, and of the ethical dialectician. He saw the facts of human life as they are, and he resolutely lived beyond them into the realm of the spirit. He loved the concrete but he looked above towards the larger realm of universal life. He often made light of the abstract reason, but in his own plastic and active way he uttered some of the great words of the universal reason, and he has helped his people to understand and to put into practice these words.

I ask you to remember him then, not only as the great psychologist, the radical empiricist, the pragmatist, but as the interpreter of the ethical spirit of his time and of his people – the interpreter who has pointed the way beyond the trivialities which he so well understood and transcended towards that

"Rule of Reason" which the prophetic maxim of our supreme court has just brought afresh to the attention of our people. That "Rule of Reason," when it comes, will not be a mere collection of abstractions. It will be, as James demanded, something concrete and practical. And it will indeed appeal to our faith as well as to our discursive logical processes. But it will express the transformed and enlightened American spirit as James already began to express it. Let him too be viewed as a prophet of the nation that is to be.

WILLIAM JAMES

George Santayana. "William James." *Character and Opinion in the United States* (New York: Charles Scribner's Sons, 1920), chap. 3, pp. 64–96.

William James enjoyed in his youth what are called advantages: he lived among cultivated people, travelled, had teachers of various nationalities. His father was one of those somewhat obscure sages whom early America produced: mystics of independent mind, hermits in the desert of business, and heretics in the churches. They were intense individualists, full of veneration for the free souls of their children, and convinced that every one should paddle his own canoe, especially on the high seas. William James accordingly enjoyed a stimulating if slightly irregular education: he never acquired that reposeful mastery of particular authors and those safe ways of feeling and judging which are fostered in great schools and universities. In consequence he showed an almost physical horror of club sentiment and of the stifling atmosphere of all officialdom. He had a knack for drawing, and rather the temperament of the artist; but the unlovely secrets of nature and the troubles of man preoccupied him, and he chose medicine for his profession. Instead of practising, however, he turned to teaching physiology, and from that passed gradually to psychology and philosophy.

In his earlier years he retained some traces of polyglot student days at Paris, Bonn, Vienna, or Geneva; he slipped sometimes into foreign phrases, uttered in their full vernacular; and there was an occasional afterglow of Bohemia about him, in the bright stripe of a shirt or the exuberance of a tie. On points of art or medicine he retained a professional touch and an unconscious ease which he hardly acquired in metaphysics. I suspect he had heartily admired some of his masters in those other subjects, but had never seen a philosopher whom he would have cared to resemble. Of course there was nothing of the artist in William James, as the artist is sometimes conceived in England, nothing of the aesthete, nothing affected or limp. In person he was short rather than tall, erect, brisk, bearded, intensely masculine. While he shone in expression and would have wished his style to be noble if it could also be strong, he preferred in the end to be spontaneous, and to leave it at that; he tolerated slang in himself rather than primness. The rough, homely, picturesque phrase, whatever was graphic and racy, recommended itself to him; and his conversation outdid his writing in this respect. He believed in improvisation, even in thought; his lectures were not minutely prepared.

Know your subject thoroughly, he used to say, and trust to luck for the rest. There was a deep sense of insecurity in him, a mixture of humility with romanticism: we were likely to be more or less wrong anyhow, but we might be wholly sincere. One moment should respect the insight of another, without trying to establish too regimental a uniformity. If you corrected yourself tartly, how could you know that the correction was not the worse mistake? All our opinions were born free and equal, all children of the Lord, and if they were not consistent that was the Lord's business, not theirs. In reality, James was consistent enough, as even Emerson (more extreme in this sort of irresponsibility) was too. Inspiration has its limits, sometimes very narrow ones. But James was not consecutive, not insistent; he turned to a subject afresh, without egotism or pedantry; he dropped his old points, sometimes very good ones; and he modestly looked for light from others, who had less light than himself.

His excursions into philosophy were accordingly in the nature of raids, and it is easy for those who are attracted by one part of his work to ignore other parts, in themselves perhaps more valuable. I think that in fact his popularity does not rest on his best achievements. His popularity rests on three somewhat incidental books, *The Will to Believe*, *Pragmatism*, and *The Varieties of Religious Experience*, whereas, as it seems to me, his best achievement is his *Principles of Psychology*. In this book he surveys, in a way which for him is very systematic, a subject made to his hand. In its ostensible outlook it is a treatise like any other, but what distinguishes it is the author's gift for evoking vividly the very life of the mind. This is a work of imagination; and the subject as he conceived it, which is the flux of immediate experience in men in general, requires imagination to read it at all. It is a literary subject, like autobiography or psychological fiction, and can be treated only poetically; and in this sense Shakespeare is a better psychologist than Locke or Kant. Yet this gift of imagination is not merely literary; it is not useless in divining the truths of science, and it is invaluable in throwing off prejudice and scientific shams. The fresh imagination and vitality of William James led him to break through many a false convention. He saw that experience, as we endure it, is not a mosaic of distinct sensations, nor the expression of separate hostile faculties, such as reason and the passions, or sense and the categories; it is rather a flow of mental discourse, like a dream, in which all divisions and units are vague and shifting, and the whole is continually merging together and drifting apart. It fades gradually in the rear, like the wake of a ship, and bites into the future, like the bow cutting the water. For the candid psychologist, carried bodily on this voyage of discovery, the past is but a questionable report, and the future wholly indeterminate; everything is simply what it is experienced as being.

At the same time, psychology is supposed to be a science, a claim which would tend to confine it to the natural history of man, or the study of

behaviour, as is actually proposed by Auguste Comte and by some of James's own disciples, more jejune if more clear-headed than he. As matters now stand, however, psychology as a whole is not a science, but a branch of philosophy; it brings together the literary description of mental discourse and the scientific description of material life, in order to consider the relation between them, which is the nexus of human nature.

What was James's position on this crucial question? It is impossible to reply unequivocally. He approached philosophy as mankind originally approached it, without having a philosophy, and he lent himself to various hypotheses in various directions. He professed to begin his study on the assumptions of common sense, that there is a material world which the animals that live in it are able to perceive and to think about. He gave a congruous extension to this view in his theory that emotion is purely bodily sensation, and also in his habit of conceiving the mind as a total shifting sensibility. To pursue this path, however, would have led him to admit that nature was automatic and mind simply cognitive, conclusions from which every instinct in him recoiled. He preferred to believe that mind and matter had independent energies and could lend one another a hand, matter operating by motion and mind by intention. This dramatic, amphibious way of picturing causation is natural to common sense, and might be defended if it were clearly defined; but James was insensibly carried away from it by a subtle implication of his method. This implication was that experience or mental discourse not only constituted a set of substantive facts, but the *only* substantive facts; all else, even that material world which his psychology had postulated, could be nothing but a verbal or fantastic symbol for sensations in their experienced order. So that while nominally the door was kept open to any hypothesis regarding the conditions of the psychological flux, in truth the question was prejudged. The hypotheses, which were parts of this psychological flux, could have no object save other parts of it. That flux itself, therefore, which he could picture so vividly, was the fundamental existence. The *sense* of bounding over the waves, the *sense* of being on an adventurous voyage, was the living fact; the rest was dead reckoning. Where one's gift is, there will one's faith be also; and to this poet appearance was the only reality.

This sentiment, which always lay at the back of his mind, reached something like formal expression in his latest writings, where he sketched what he called radical empiricism. The word experience is like a shrapnel shell, and bursts into a thousand meanings. Here we must no longer think of its setting, its discoveries, or its march; to treat it radically we must abstract its immediate objects and reduce it to pure data. It is obvious (and the sequel has already proved) that experience so understood would lose its romantic signification, as a personal adventure or a response to the shocks of fortune. "Experience" would turn into a cosmic dance of absolute entities created and destroyed *in vacuo* according to universal laws, or perhaps by chance. No

minds would gather this experience, and no material agencies would impose it; but the immediate objects present to any one would simply be parts of the universal fireworks, continuous with the rest, and all the parts, even if not present to anybody, would have the same status. Experience would then not at all resemble what Shakespeare reports or what James himself had described in his psychology. If it could be experienced as it flows in its entirety (which is fortunately impracticable), it would be a perpetual mathematical nightmare. Every whirling atom, every changing relation, and every incidental perspective would be a part of it. I am far from wishing to deny for a moment the scientific value of such a cosmic system, if it can be worked out; physics and mathematics seem to me to plunge far deeper than literary psychology into the groundwork of this world; but human experience is the stuff of literary psychology; we cannot reach the stuff of physics and mathematics except by arresting or even hypostatising some elements of appearance, and expanding them on an abstracted and hypothetical plane of their own. Experience, as memory and literature rehearse it, remains nearer to us than that: it is something dreamful, passionate, dramatic, and significative.

Certainly this personal human experience, expressible in literature and in talk, and no cosmic system however profound, was what James knew best and trusted most. Had he seen the developments of his radical empiricism, I cannot help thinking he would have marvelled that such logical mechanisms should have been hatched out of that egg. The principal problems and aspirations that haunted him all his life long would lose their meaning in that cosmic atmosphere. The pragmatic nature of truth, for instance, would never suggest itself in the presence of pure data; but a romantic mind soaked in agnosticism, conscious of its own habits and assuming an environment the exact structure of which can never be observed, may well convince itself that, for experience, truth is nothing but a happy use of signs – which is indeed the truth of literature. But if we once accept *any* system of the universe as literally true, the value of convenient signs to prepare us for such experience as is yet absent cannot be called truth: it is plainly nothing but a necessary inaccuracy. So, too, with the question of the survival of the human individual after death. For radical empiricism a human individual is simply a certain cycle or complex of terms, like any other natural fact; that some echoes of his mind should recur after the regular chimes have ceased, would have nothing paradoxical about it. A mathematical world is a good deal like music, with its repetitions and transpositions, and a little trill, which you might call a person, might well peep up here and there all over a vast composition. Something of that sort may be the truth of spiritualism; but it is not what the spiritualists imagine. Their whole interest lies not in the experiences they have, but in the interpretation they give to them, assigning them to troubled spirits in another world; but both another world and a spirit are notions repugnant to a radical empiricism.

I think it is important to remember, if we are not to misunderstand William James, that his radical empiricism and pragmatism were in his own mind only methods; his doctrine, if he may be said to have had one, was agnosticism. And just because he was an agnostic (feeling instinctively that beliefs and opinions, if they had any objective beyond themselves, could never be sure they had attained it), he seemed in one sense so favourable to credulity. He was not credulous himself, far from it; he was well aware that the trust he put in people or ideas might betray him. For that very reason he was respectful and pitiful to the trustfulness of others. Doubtless they were wrong, but who were we to say so? In his own person he was ready enough to face the mystery of things, and whatever the womb of time might bring forth; but until the curtain was rung down on the last act of the drama (and it might have no last act!) he wished the intellectual cripples and the moral hunchbacks not to be jeered at; perhaps they might turn out to be the heroes of the play. Who could tell what heavenly influences might not pierce to these sensitive half-flayed creatures, which are lost on the thick-skinned, the sane, and the duly goggled? We must not suppose, however, that James meant these contrite and romantic suggestions dogmatically. The agnostic, as well as the physician and neurologist in him, was never quite eclipsed. The hope that some new revelation might come from the lowly and weak could never mean to him what it meant to the early Christians. For him it was only a right conceded to them to experiment with their special faiths; he did not expect such faiths to be discoveries of absolute fact, which everybody else might be constrained to recognise. If any one had made such a claim, and had seemed to have some chance of imposing it universally, James would have been the first to turn against him; not, of course, on the ground that it was *impossible* that such an orthodoxy should be true, but with a profound conviction that it was to be feared and distrusted. No: the degree of authority and honour to be accorded to various human faiths was a moral question, not a theoretical one. All faiths were what they were experienced as being, in their capacity of faiths; these faiths, not their objects, were the hard facts we must respect. We cannot pass, except under the illusion of the moment, to anything firmer or on a deeper level. There was accordingly no sense of security, no joy, in James's apology for personal religion. He did not really believe; he merely believed in the right of believing that you might be right if you believed.

It is this underlying agnosticism that explains an incoherence which we might find in his popular works, where the story and the moral do not seem to hang together. Professedly they are works of psychological observation; but the tendency and suasion in them seems to run to disintegrating the idea of truth, recommending belief without reason, and encouraging superstition. A psychologist who was not an agnostic would have indicated, as far as possible, whether the beliefs and experiences he was describing were instances of delusion or of rare and fine perception, or in what measure they were a

mixture of both. But James – and this is what gives such romantic warmth to these writings of his – disclaims all antecedent or superior knowledge, listens to the testimony of each witness in turn, and only by accident allows us to feel that he is swayed by the eloquence and vehemence of some of them rather than of others. This method is modest, generous, and impartial; but if James intended, as I think he did, to picture the *drama* of human belief, with its risks and triumphs, the method was inadequate. Dramatists never hesitate to assume, and to let the audience perceive, who is good and who bad, who wise and who foolish, in their pieces; otherwise their work would be as impotent dramatically as scientifically. The tragedy and comedy of life lie precisely in the contrast between the illusions or passions of the characters and their true condition and fate, hidden from them at first, but evident to the author and the public. If in our diffidence and scrupulous fairness we refuse to take this judicial attitude, we shall be led to strange conclusions. The navigator, for instance, trusting his "experience" (which here, as in the case of religious people, means his imagination and his art), insists on believing that the earth is spherical; he has sailed round it. That is to say, he has seemed to himself to steer westward and westward, and has seemed to get home again. But how should he know that home is now where it was before, or that his past and present impressions of it come from the same, or from any, material object? How should he know that space is as trim and tri-dimensional as the discredited Euclidians used to say it was? If, on the contrary, my worthy aunt, trusting to her longer and less ambiguous experience of her garden, insists that the earth is flat, and observes that the theory that it is round, which is only a theory, is much less often tested and found useful than her own perception of its flatness, and that moreover that theory is pedantic, intellectualistic, and a product of academies, and a rash dogma to impose on mankind for ever and ever, it might seem that on James's principle we ought to agree with her. But no; on James's real principles we need not agree with her, nor with the navigator either. Radical empiricism, which is radical agnosticism, delivers us from so benighted a choice. For the quarrel becomes unmeaning when we remember that the earth is *both* flat and round, if it is experienced as being both. The substantive fact is not a single object on which both the perception and the theory are expected to converge; the substantive facts are the theory and the perception themselves. And we may note in passing that empiricism, when it ceases to value experience as a means of discovering external things, can give up its ancient prejudice in favour of sense as against imagination, for imagination and thought are immediate experiences as much as sensation is: they are therefore, for absolute empiricism, no less actual ingredients of reality.

In *The Varieties of Religious Experience* we find the same apologetic intention running through a vivid account of what seems for the most part (as James acknowledged) religious disease. Normal religious experience is

hardly described in it. Religious experience, for the great mass of mankind, consists in simple faith in the truth and benefit of their religious traditions. But to James something so conventional and rationalistic seemed hardly experience and hardly religious; he was thinking only of irruptive visions and feelings as interpreted by the mystics who had them. These interpretations he ostensibly presents, with more or less wistful sympathy for what they were worth; but emotionally he wished to champion them. The religions that had sprung up in America spontaneously – communistic, hysterical, spiritistic, or medicinal – were despised by select and superior people. You might inquire into them, as you might go slumming, but they remained suspect and distasteful. This picking up of genteel skirts on the part of his acquaintance prompted William James to roll up his sleeves – not for a knock-out blow, but for a thorough clinical demonstration. He would tenderly vivisect the experiences in question, to show how living they were, though of course he could not guarantee, more than other surgeons do, that the patient would survive the operation. An operation that eventually kills may be technically successful, and the man may die cured; and so a description of religion that showed it to be madness might first show how real and how warm it was, so that if it perished, at least it would perish understood.

I never observed in William James any personal anxiety or enthusiasm for any of these dubious tenets. His conception even of such a thing as free-will, which he always ardently defended, remained vague; he avoided defining even what he conceived to be desirable in such matters. But he wished to protect the weak against the strong, and what he hated beyond everything was the *non possumus* of any constituted authority. Philosophy for him had a Polish constitution; so long as a single vote was cast against the majority, nothing could pass. The suspense of judgment which he had imposed on himself as a duty, became almost a necessity. I think it would have depressed him if he had had to confess that any important question was finally settled. He would still have hoped that something might turn up on the other side, and that just as the scientific hangman was about to despatch the poor convicted prisoner, an unexpected witness would ride up in hot haste, and prove him innocent. Experience seems to most of us to lead to conclusions, but empiricism has sworn never to draw them.

In the discourse on "The Energies of Men," certain physiological marvels are recorded, as if to suggest that the resources of our minds and bodies are infinite, or can be infinitely enlarged by divine grace. Yet James would not, I am sure, have accepted that inference. He would, under pressure, have drawn in his mystical horns under his scientific shell; but he was not naturalist enough to feel instinctively that the wonderful and the natural are all of a piece, and that only our degree of habituation distinguishes them. A nucleus, which we may poetically call the soul, certainly lies within us, by which our bodies and minds are generated and controlled, like an army by a government.

In this nucleus, since nature in a small compass has room for anything, vast quantities of energy may well be stored up, which may be tapped on occasion, or which may serve like an electric spark to let loose energy previously existing in the grosser parts. But the absolute autocracy of this central power, or its success in imposing extraordinary trials on its subjects, is not an obvious good. Perhaps, like a democratic government, the soul is at its best when it merely collects and coordinates the impulses coming from the senses. The inner man is at times a tyrant, parasitical, wasteful, and voluptuous. At other times he is fanatical and mad. When he asks for and obtains violent exertions from the body, the question often is, as with the exploits of conquerors and conjurers, whether the impulse to do such prodigious things was not gratuitous, and the things nugatory. Who would wish to be a mystic? James himself, who by nature was a spirited rather than a spiritual man, had no liking for sanctimonious transcendentalists, visionaries, or ascetics; he hated minds that run thin. But he hastened to correct this manly impulse, lest it should be unjust, and forced himself to overcome his repugnance. This was made easier when the unearthly phenomenon had a healing or saving function in the everyday material world; miracle then re-established its ancient identity with medicine, and both of them were humanised. Even when this union was not attained, James was reconciled to the miracle-workers partly by his great charity, and partly by his hunter's instinct to follow a scent, for he believed discoveries to be imminent. Besides, a philosopher who is a teacher of youth is more concerned to give people a right start than a right conclusion. James fell in with the hortatory tradition of college sages; he turned his psychology, whenever he could do so honestly, to purposes of edification; and his little sermons on habit, on will, on faith, and this on the latent capacities of men, were fine and stirring, and just the sermons to preach to the young Christian soldier. He was much less sceptical in morals than in science. He seems to have felt sure that certain thoughts and hopes – those familiar to a liberal Protestantism – were every man's true friends in life. This assumption would have been hard to defend if he or those he habitually addressed had ever questioned it; yet his whole argument for voluntarily cultivating these beliefs rests on this assumption, that they are beneficent. Since, whether we will or no, we cannot escape the risk of error, and must succumb to some human or pathological bias, at least we might do so gracefully and in the form that would profit us most, by clinging to those prejudices which help us to lead what we all feel is a good life. But what is a good life? Had William James, had the people about him, had modern philosophers anywhere, any notion of that? I cannot think so. They had much experience of personal goodness, and love of it; they had standards of character and right conduct; but as to what might render human existence good, excellent, beautiful, happy, and worth having as a whole, their notions were utterly thin and barbarous. They had forgotten the Greeks, or never known them.

This argument accordingly suffers from the same weakness as the similar argument of Pascal in favour of Catholic orthodoxy. You should force yourself to believe in it, he said, because if you do so and are right you win heaven, while if you are wrong you lose nothing. What would Protestants, Mohammedans, and Hindus say to that? Those alternatives of Pascal's are not the sole nor the true alternatives; such a wager – betting on the improbable because you are offered big odds – is an unworthy parody of the real choice between wisdom and folly. There is no heaven to be won in such a spirit, and if there was, a philosopher would despise it. So William James would have us bet on immortality, or bet on our power to succeed, because if we win the wager we can live to congratulate ourselves on our true instinct, while we lose nothing if we have made a mistake; for unless you have the satisfaction of finding that you have been right, the dignity of having been right is apparently nothing. Or if the argument is rather that these beliefs, whether true or false, make life better in this world, the thing is simply false. To be boosted by an illusion is not to live better than to live in harmony with the truth; it is not nearly so safe, not nearly so sweet, and not nearly so fruitful. These refusals to part with a decayed illusion are really an infection to the mind. Believe, certainly; we cannot help believing; but believe rationally, holding what seems certain for certain, what seems probable for probable, what seems desirable for desirable, and what seems false for false.

In this matter, as usual, James had a true psychological fact and a generous instinct behind his confused moral suggestions. It is a psychological fact that men are influenced in their beliefs by their will and desires; indeed, I think we can go further and say that in its essence belief is an expression of impulse, of readiness to act. It is only peripherally, as our action is gradually adjusted to things, and our impulses to our possible or necessary action, that our ideas begin to hug the facts, and to acquire a true, if still a symbolic, significance. We do not need a will to believe; we only need a will to study the object in which we are inevitably believing. But James was thinking less of belief in what we find than of belief in what we hope for: a belief which is not at all clear and not at all necessary in the life of mortals. Like most Americans, however, only more lyrically, James felt the call of the future and the assurance that it could be made far better, totally other, than the past. The pictures that religion had painted of heaven or the millennium were not what he prized, although his Swedenborgian connection might have made him tender to them, as perhaps it did to familiar spirits. It was the moral succour offered by religion, its open spaces, the possibility of miracles *in extremis*, that must be retained. If we recoiled at the thought of being dupes (which is perhaps what nature intended us to be), were we less likely to be dupes in disbelieving these sustaining truths than in believing them? Faith was needed to bring about the reform of faith itself, as well as all other reforms.

In some cases faith in success could nerve us to bring success about, and so justify itself by its own operation. This is a thought typical of James at his worst – a worst in which there is always a good side. Here again psychological observation is used with the best intentions to hearten oneself and other people; but the fact observed is not at all understood, and a moral twist is given to it which (besides being morally questionable) almost amounts to falsifying the fact itself. Why does belief that you can jump a ditch help you to jump it? Because it is a symptom of the fact that you *could* jump it, that your legs were fit and that the ditch was two yards wide and not twenty. A rapid and just appreciation of these facts has given you your confidence, or at least has made it reasonable, manly, and prophetic; otherwise you would have been a fool and got a ducking for it. Assurance is contemptible and fatal unless it is self-knowledge. If you had been rattled you might have failed, because that would have been a symptom of the fact that you were out of gear; you would have been afraid because you trembled, as James at his best proclaimed. You would never have quailed if your system had been reacting smoothly to its opportunities, any more than you would totter and see double if you were not intoxicated. Fear is a sensation of actual nervousness and disarray, and confidence a sensation of actual readiness; they are not disembodied feelings, existing for no reason, the devil Funk and the angel Courage, one or the other of whom may come down arbitrarily into your body, and revolutionise it. That is childish mythology, which survives innocently enough as a figure of speech, until a philosopher is found to take that figure of speech seriously. Nor is the moral suggestion here less unsound. What is good is not the presumption of power, but the possession of it: a clear head, aware of its resources, not a fuddled optimism, calling up spirits from the vasty deep. Courage is not a virtue, said Socrates, unless it is also wisdom. Could anything be truer both of courage in doing and of courage in believing? But it takes tenacity, it takes *reasonable* courage, to stick to scientific insights such as this of Socrates or that of James about the emotions; it is easier to lapse into the traditional manner, to search natural philosophy for miracles and moral lessons, and in morals proper, in the reasoned expression of preference, to splash about without a philosophy.

William James shared the passions of liberalism. He belonged to the left, which, as they say in Spain, is the side of the heart, as the right is that of the liver; at any rate there was much blood and no gall in his philosophy. He was one of those elder Americans still disquieted by the ghost of tyranny, social and ecclesiastical. Even the beauties of the past troubled him; he had a puritan feeling that they were tainted. They had been cruel and frivolous, and must have suppressed far better things. But what, we may ask, might these better things be? It may do for a revolutionary politician to say: "I may not know what I want – except office – but I know what I don't want"; it will never do for a philosopher. Aversions and fears imply principles of preference,

goods acknowledged; and it is the philosopher's business to make these goods explicit. Liberty is not an art, liberty must be used to bring some natural art to fruition. Shall it be simply eating and drinking and wondering what will happen next? If there is some deep and settled need in the heart of man, to give direction to his efforts, what else should a philosopher do but discover and announce what that need is?

There is a sense in which James was not a philosopher at all. He once said to me: "What a curse philosophy would be if we couldn't forget all about it!" In other words, philosophy was not to him what it has been to so many, a consolation and sanctuary in a life which would have been unsatisfying without it. It would be incongruous, therefore, to expect of him that he should build a philosophy like an edifice to go and live in for good. Philosophy to him was rather like a maze in which he happened to find himself wandering, and what he was looking for was the way out. In the presence of theories of any sort he was attentive, puzzled, suspicious, with a certain inner prompting to disregard them. He lived all his life among them, as a child lives among grown-up people; what a relief to turn from those stolid giants, with their prohibitions and exactions and tiresome talk, to another real child or a nice animal! Of course grown-up people are useful, and so James considered that theories might be; but in themselves, to live with, they were rather in the way, and at bottom our natural enemies. It was well to challenge one or another of them when you got a chance; perhaps that challenge might break some spell, transform the strange landscape, and simplify life. A theory while you were creating or using it was like a story you were telling yourself or a game you were playing; it was a warm, self-justifying thing then; but when the glow of creation or expectation was over, a theory was a phantom, like a ghost, or like the minds of other people. To all other people, even to ghosts, William James was the soul of courtesy; and he was civil to most theories as well, as to more or less interesting strangers that invaded him. Nobody ever recognised more heartily the chance that others had of being right, and the right they had to be different. Yet when it came to understanding what they meant, whether they were theories or persons, his intuition outran his patience; he made some brilliant impressionistic sketch in his fancy and called it by their name. This sketch was as often flattered as distorted, and he was at times the dupe of his desire to be appreciative and give the devil his due; he was too impulsive for exact sympathy; too subjective, too romantic, to be just. Love is very penetrating, but it penetrates to possibilities rather than to facts. The logic of opinions, as well as the exact opinions themselves, were not things James saw easily, or traced with pleasure. He liked to take things one by one, rather than to put two and two together. He was a mystic, a mystic in love with life. He was comparable to Rousseau and to Walt Whitman; he expressed a generous and tender sensibility, rebelling against sophistication, and preferring daily sights and sounds, and a vague but

indomitable faith in fortune, to any settled intellectual tradition calling itself science or philosophy.

A prophet is not without honour save in his own country; and until the return wave of James's reputation reached America from Europe, his pupils and friends were hardly aware that he was such a distinguished man. Everybody liked him, and delighted in him for his generous, gullible nature and brilliant sallies. He was a sort of Irishman among the Brahmins, and seemed hardly imposing enough for a great man. They laughed at his erratic views and his undisguised limitations. Of course a conscientious professor ought to know everything he professes to know, but then, they thought, a dignified professor ought to seem to know everything. The precise theologians and panoplied idealists, who exist even in America, shook their heads. What sound philosophy, said they to themselves, could be expected from an irresponsible doctor, who was not even a college graduate, a crude empiricist, and vivisector of frogs? On the other hand, the solid men of business were not entirely reassured concerning a teacher of youth who seemed to have no system in particular – the ignorant rather demand that the learned should have a system in store, to be applied at a pinch; and they could not quite swallow a private gentleman who dabbled in hypnotism, frequented mediums, didn't talk like a book, and didn't write like a book, except like one of his own. Even his pupils, attached as they invariably were to his person, felt some doubts about the profundity of one who was so very natural, and who after some interruption during a lecture – and he said life was a series of interruptions – would slap his forehead and ask the man in the front row "What *was* I talking about?" Perhaps in the first years of his teaching he felt a little in the professor's chair as a military man might feel when obliged to read the prayers at a funeral. He probably conceived what he said more deeply than a more scholastic mind might have conceived it; yet he would have been more comfortable if some one else had said it for him. He liked to open the window, and look out for a moment. I think he was glad when the bell rang, and he could be himself again until the next day. But in the midst of this routine of the class-room the spirit would sometimes come upon him, and, leaning his head on his hand, he would let fall golden words, picturesque, fresh from the heart, full of the knowledge of good and evil. Incidentally there would crop up some humorous characterisation, some candid confession of doubt or of instinctive preference, some pungent scrap of learning; radicalisms plunging sometimes into the sub-soil of all human philosophies; and, on occasion, thoughts of simple wisdom and wistful piety, the most unfeigned and manly that anybody ever had.

AMERICA AND THE LIFE OF REASON

Horace M. Kallen. "America and the Life of Reason. II." *Journal of Philosophy* 18.21 (13 October 1921): 568–575.

V

The discussion of James and Royce by the last survivor of the great school brings together in a fashion vivid and touching and beautiful the diversified spirit of its oneness, the uncompromised singularity of each member of that high fellowship. There is neither need nor service here to expound and review the differences between Mr. Santayana and his colleagues, and to resume his criticisms, profound or wise or mischievous or uncomprehending, of idealism and pragmatism, or his harder, less urbane, somewhat contemptuous judgment of the new realism. These have been often stated and are well known, but the perfection of their form adds an esthetic, not a logical, value to their content. Nor is anything added to the method. Mr. Santayana still restates the alien doctrine in the light, not of its own premise and the signification of its own terms, but of his own view as critic. He still makes the same assumption that such a shift of the premises does not put the argument beside the point, that it does not, like the "higher superstition," convert inquiry into an exercise in assurance, that it is not in its own turn the arguing of a foregone conclusion. Take as an instance, the discussion of James's ideas regarding the will to believe: "In some cases," Mr. Santayana interprets, "faith in success could nerve us to bring success about, and so justify itself by its own operation. This is thought typical of James at his worst – a worst in which there is always a good side. Here again psychological observation is used with the best intentions to hearten oneself and other people; but the fact observed is not at all understood, and a moral twirl is given to it which (besides being morally questionable) almost amounts to falsifying the fact itself. Why does the belief that you can jump a ditch help you to jump it? Because it is symptom of the fact that you *could* jump it, that your legs were fit and that the ditch was two yards wide and not twenty. A rapid and just appreciation of these facts has given you your confidence, or at least has made it reasonable, manly and prophetic; otherwise you would have been a fool and got a ducking for it. Assurance is contemptible and fatal unless it is self-knowledge. If you had been rattled you might have failed, because that would have been a symptom of the fact that you were out of gear; you would have been afraid because you trembled, as James at his best proclaimed.

You would never have quailed if your system had been reacting smoothly to its opportunities, any more than you would titter and see double if you were not intoxicated.... Nor is the moral suggestion here less unsound. What is good is not the presumption of power but the possession of it: a clear head, aware of its resources, not a fuddled optimism, calling up spirits from the vasty deep. Courage is not a virtue, said Socrates, unless it is also wisdom. Could anything be truer both of courage in doing and of courage in believing? But it takes tenacity, it takes *reasonable* courage, to stick to scientific insights such as this of Socrates or that of James about the emotions; it is easier to lapse into the traditional manner, to search natural philosophy for miracles and moral lessons, and in morals prefer, in the reasoned expression of preference, to splash about without a philosophy."

Those who recall the passage in "The Sentiment of Rationality" on which these sentences are commentary will perceive at once how it is parodied, and – the observation is unavoidable – degraded. An unwonted and momentous situation is made over into a common place one; an issue of life and death into one of walking or getting a ducking; an abyss is converted into a ditch, a terrible leap into an ordinary jump. The propulsive emotional crisis, the absence or impossibility of any basis competent for inference are converted into their opposites. The *process* of the self-confirmation of the act of faith that creates its own verification is displaced by the prior guarantee in observation of this verification. Prospect and change are declared to be really retrospect and fixity; you *have* jumped the ditch because you *could*. The whole premise of the argument has been shifted and the contrary conclusion drawn from the contrary premise. The risk, on which courage is postulated, the conception of faith as the willingness, in James's words, "to act in a cause the prosperous issue of which is *not* certified to us in advance," or as the "courage weighted with responsibility – such courage as the Nelsons and Washingtons never failed to show after they had taken everything into account that might tell against their success and made every provision to minimize disaster," these are ruled out. After much brave protestation, the game is made a game with loaded dice after all, made just what in James's hypothesis it absolutely was not. In effect, the argument does not refute, it contradicts. Mr. Santayana's philosophy runs parallel with those of his colleagues but does not meet them. The same heaven arches over them, whose shifting iridescence they alike give back; they are fed by the same springs and they water the same lands and are by them muddied, and that is all. They touch sometimes, but mingle never, and perhaps never could.

It is this mingling of the same earth and sky in their separate streams that renders them alike American. Neither could Santayana escape the bondage of the "two different responsibilities," that of "describing things as they are, and that of finding them propitious to certain preconceived human desires." For the life of reason is no less such a desire, and for all its obscuration no

less pervasive, and for all its urbanity no less capable of becoming a dogma and generating a religion than the "higher superstition." The adventure after the "good life" was undertaken by all three alike, under a similar impulsion and in a similar atmosphere. That what each found should have been different is not without its implication of the nature of things, or of the condition of the intellectual life in the United States. And that one kind of life only should be called a good life, and that of a fashion arising not from the soil of present life, but from a memory and estimate of life long gone, that perhaps is most romantic and American of all.

Of the relations of James and James's thought to this America, Mr. Santayana says very little. He remarks how essentially different and other James appeared to the academic and social community in which he dwelt, how he was a liberal – "one of those elder Americans still disquieted by the ghost of tyranny, social and ecclesiastical," but nothing more. He ignores his militant love of peace, so essentially American, his reformist spirit, so characteristic of New England. His preoccupation is entirely with James's temperament and philosophy. These he sums up as "a romantic mind soaked in agnosticism, conscious of its own habits and assuming an environment the exact structure of which can never be observed"; the conception of radical empiricism and pragmatism as methods, the analysis of belief, the notion of pure experience, the analysis of truth, and the other spokes in the wheel of James's thought are really treated as radiations from this central hub. Consequently, James's greatness accrues to him as a psychologist, not as a philosopher. Philosophy was to him, in Mr. Santayana's estimation, not a "consolation and a sanctuary in life which would have been unsatisfying without it," but "a maze in which he found himself wandering," and he was trying to find his way out of the maze. But this philosophy, Mr. Santayana fails to recognize, was the verbiage of the schools; it was not the way out or the brave seeing of the contradiction in things and in oneself which he as bravely celebrated in his description of the Harvard school.

Yet, to the American aspect of this contradiction in things and men James was a philosopher most sensitive. In his training and contacts he was essentially more cosmopolitan than either of his colleagues; his philosophy was nevertheless an insight into the eternal springs of this contradiction, flowing so much more freely, into channels so much less artificial in America than in Europe. He had a greater natural kinship with America's spontaneous life and he envisaged in a pertinent metaphysical premise the whole unbalanced and shifting structure of the changing American economy; the atomism and fluidity of American society; the democratic dogma; and, most famously and influentially, the tenacious experimentalism, the swift courage, the stark faith of men to put life and property and opinion to the proof of adventure into the unknown wilderness toward whatever "good life" nature suggested or calculation advised.

In Royce's thinking the same influences are present, but not freely. Between them and his vision there is interposed the veil of the genteel tradition, and its unity and texture imparts to them a false solidity. He is not, like James, looking at the tradition as well as the thing, and evaluating the tradition also. He is looking at the thing, certainly, persistently, and looking at it *though* the tradition. Hence a certain liturgical unction and obscurity which pervades Royce's thought. He viewed everything, Mr. Santayana says, in relation to something else, and this something contained invariably an element sad and troublesome, out of which the thing under view, if good, arises by a sort of Hegelian implication. His proof of the existence of God is his demonstration of the reality of error; his assurance of the reality of the good was his experience of the power of evil. He argued, in effect, in his own special way the foregone conclusions of the "higher superstition." His philosophy was all compensatory. By translating Calvinism into epistemological terms, by imparting to the dialectic method of Hegel the earnestness, eloquence and voluble passion of his own temperament and scene, he gave the genteel tradition a new pattern and an added content, This was not logical. He had, it is true, a reputation for logic and loved the intricacies of logistics; he could, on occasion, eye to eye with Spinoza, see things under the aspect of eternity. But "there was no clearness in his heart." In him the intellect, which Mr. Santayana regards as the "faculty of seeing things as they are," was dimmed and distorted by the passion for seeing things as we want them to be. Nevertheless, the hardness of the nature of things, its pang and poison, troubled Royce. He had a reverence for what hurts: "in so far as God was the devil ... devil worship was true religion." Life and the good of life are the struggle between good and evil, and the struggle can not be unless evil exists the peer of good. The proof of this was evident in daily routine as well as Hegelian logic. Royce "had always experienced and seen about him a groping, burdened, mediocre life; he had observed how fortune is continually lying in ambush for us, in order to bring good out of evil and evil out of good. In his age and country all was change, preparation, hurry, material achievement; nothing was an old and sufficient possession.... The whole scene was filled with acts and virtues which were merely useful or remedial. The most pressing arts, like war and forced labour, presuppose evil, work immense havoc, and take the place of greater possible goods. The most indispensable virtues, like courage and industry, do likewise. But these seemed in Royce's world the only honorable things." Thus the grappling with nature of which so much of American life consists was converted into a standard of life, and given such grace and distinction as clothing it in the decent garment of the genteel tradition might impart. In this lay Royce's personal conscience, and it carried him beyond his Hegelian ethics, as his protest against the sinking of the Lusitania showed. By training and technique a Hegelian, by implication a solipsist, this conscience of his, which "added a deep, almost remorseful

unrest to his hard life," carried him beyond Hegelism, making his God real, and begging the gratuity of another life in the immortal society of his friends. All in all, Royce "resembled some great-hearted mediaeval peasant visited by mystical promptings, whom the monks should have adopted and allowed to browze among their theological folios.... His was a gothic and scholastic spirit, intent on honoring God in systematic works, like the coral insect or the spider; eventually creating a fabric that in its homely intricacy and fulness arrested and moved the heart, the web of it was so vast, and so full of mystery and yearning."

It may be inferred from Mr. Santayana's treatment of both James and Royce that the fulness of the new world influence was not manifest in them. To him their insight was a mingling of tradition and actualities, with tradition more than a little dominant. In the later contemporary movements of philosophy in America the relationships are, however, reversed. Tradition is either passing or forgotten. He sees the younger professors of philosophy as more like engineers or doctors or social reformers than clergymen or schoolmasters. Religion has ceased to signify anything momentous for them. They are no longer so eloquent and apostolic as professors of philosophy used to be; instead, "very professional in tone and conscious of the *Fach*," a special craft in the academic industry. The younger American professor of philosophy is a person with an education "more pretentious than thorough; his style is deplorable; social pressure and his own great eagerness have condemned him to overwork, committee meetings, early marriage, premature authorship and lecturing two or three times a week under forced draught. He has no peace in himself, no window open to a calm horizon, and in his heart perhaps little taste for mere scholarship or pure speculation. Yet, like the plain soldier staggering under his clumsy equipment, he is cheerful; he keeps his faith in himself and his allotted work, puts up with being toasted only on one side, remains open-minded, whole hearted, appreciative, helpful, confident of the future of goodness and of science. In a word, he is a cell in that teeming democratic body; he draws from its warm, contagious activities the sanctions of his own life, and less consciously the spirit of his philosophy."

The marching front of this spirit is to be found in pragmatism and new realism. The former is a confusion of mind which converts truth, the vision of all things under the form of eternity, ever beyond the reach of psychology, into the psychological doctrine of the relation of signs to things signified, interpreting this relation in terms of contiguity and succession. The latter is a standing on its head of the traditional German idealism. This replaced things by consciousness; the new realism replaces consciousness by things. It relieves "an overtaxed and self-infected generation" by "abolishing a prerequisite to the obvious, and leaving the obvious to stand alone." It democratizes reality by reducing everything to the same status and making it equally accessible to everybody. "The young American is thus reassured: his joy in living and

learning is no longer chilled by the contempt which idealism used to cast on nature for being imaginary and on science for being intellectual." Both the contemporary schools thus reflect the atmosphere of America, and in two ways. First, in that "it has accelerated and rendered fearless the disintegration of conventional categories.... In the second place, the younger cosmopolitan America has favoured the impartial assemblage and mutual confrontation of all sorts of ideas. It has produced, in intellectual matters, a sort of happy watchfulness and insecurity." And this is how migration to the new world has affected philosophical ideas.

Which may be so. But I doubt whether even those pragmatists and new realists who have been curious about just such matters and have reflected on them will recognize the features of their ancestry or themselves in the portrait. "The disintegration of conventional categories," they will concede, but the new realists will insist, I think, that so far as they are concerned it is a conventional and not an American disintegration, and that the forces which operate it in America do not differ in kind, intensity or range from those in Europe. The pragmatists will concede the total implication of the description, but will declare that Mr. Santayana has altogether failed to grasp its character and import. This failure is perhaps at base emotional rather than intellectual. Mr. Santayana has always manifested a certain blindness to the ideas of change and time and flux in their intrinsicality and inwardness, and a certain imperviousness to the meaning of the categories and concepts which have grown out of them, and the new philosophic technique which they have generated. Preoccupied with the eternal, the static, the immutable, as Plato and Aristotle and Spinoza have formulated these in ethics and physics and psychology, he has invariably translated the studies of the temporalists into the language of the eternalists, substituting these incommensurables for one another, with beautiful but not cogent results. With the new realists, on the other hand, he is more at home. He and they have the same devotion and speak the same language. They also are eternalists, preoccupied with the unchanging structure of things. They are, however, so preoccupied, not because they recognize change and acquiesce in insecurity, but because they deny change and, fearing, resent insecurity. That they have "abolished the prerequisite to the obvious" is a sign of this denial and resentment. This abolition is not a simplification which frees the new realist's "joy in living and learning ... from the contempt which idealism used to cast on nature for being imaginary and on science for being didactic." On the contrary, there appears to be no joy in the neo-realist. He is as Calvinistic as his forebears. Only the incidence of the cosmic compulsion has been shifted for him. It resides no longer in the immutable decrees of a transcendental God, but in the immutable architectonic of a nature whose laws operate by logistical implication and whose providence is didactic without being altogether personal. Thus, together with the denial of a prerequisite to the obvious goes the establishment and cultivation of security,

the relaxation of watchfulness. It is an attenuation of the "higher superstition" but it is the higher superstition still. It is the modern scholasticism, the scholasticism of science converted from a method of inquiry into a process of affirmation, from the logic of experiment to the logic of assertion. Its social inspiration is to be sought in financial industrialism, with the regimentation, precision, inevitability of the automatic machine in shop and factory, and in the similar qualities more refined in the mathematics of accounting in bank and office. It is unrelated to the sentiment, experience and aspiration of the migration to the new world. That has still not reached expression in philosophy. It is as yet vocal in poetry alone.

VI

So much, then, for Mr. Santayana's resolution of the puzzle of America. It is complementary rather than parallel to those of his predecessors and fellows in the field, dealing with an inward aspect of American character and opinion too withdrawn and elusive for any but a familiar friend to touch without distorting or to interpret without misunderstanding. It has the same narrowness and oversimplification as these others, but if it is blind to what they have seen, it is keenly sensitive to what they are blind to. Mr. Santayana is himself perhaps too deeply absorbed by the ardors and glories of the topmost turn given to life to have much sympathy for its soil or roots or branches. His study has failed to take note of the political character of the American being, of the overwhelming influence of the rigid identities of political pattern of state, nation and. City, or the power of the public school as the transmitter of the national tradition and the perpetuator of the democratic dogma, or the relation of these to the stratifying influence of the automatic machine, or the interaction of these with the diversities of soil and climate, race and culture which are constitutive of the land, and the additional diversities which are added by "the miscellany of Europe." These seem to me at the present time to have been adjusted to one another as a tensive and unstable equilibrium of forces rather than a cooperation of spirits; the various movements in art or philosophy appear more truly as negations of them or compensations for them than as their expression. What the America of the new time will be depends altogether on how soon and how completely the unstable equilibrium of forces is converted into the cooperation of spirits, and the negations and compensations become affirmations and expressions.

WILLIAM JAMES AND HIS IMPETUOUS PHILOSOPHY

Jacques Maritain. "William James and His Impetuous Philosophy." *Living Age* 311.4036 (12 November 1921): 392–396.

Within the last half-century, a philosophic movement of striking interest has been developing in the Anglo-Saxon countries, perhaps more definitely in America than in England. It has not contributed much, up to the present time, toward *raising* the level of speculative philosophy, because it is, unfortunately, deprived of all lofty creative traditions. It has built chiefly upon the foundations of Hegel, Lotze, Mill, and Renouvier – pretty poor masters themselves; and its claims to ingenuousness, to intuitive insight, to fresh unsophistication, and to a gay disregard of established precedent, too often betray, especially in the country of Walt Whitman, a rusticity in comparison with which those sensualist philosophers whom Plato imagined embracing the trunks of trees seem like the representatives of the most elaborate culture.

William James, toward whom our thoughts turn chiefly in this connection, is almost the only American philosopher who is at all well known to our own reading public. For all that, his European fame is out of proportion to the true value of his thought; at least, I believe that there is far more promise in the more honest and profound researches of other new-world philosophers, the so-called 'neo-realists'. They have, at least, the merit of having freed themselves from the absurd assumption that all philosophic values can be transformed by the magic of pragmatism; and they have the far greater merit of having detected and denounced the common fallacy that vitiates the most contradictory of modern doctrines: idealism and subjectivism. Perry and Spaulding, in subjecting the idea of relativity to a close analysis, and in restoring the true and insoluble mystery of perception, and Marvin, in reviving the great Aristotelian theory of the impossibility of absorbing into the universal and arbitrary laws of science the contingency of individual events, have put their fingers on several of the vital springs of rational thought. It is very desirable that the discussion between these men and the academicians, touched upon in a book by M. Kremer, should be actively followed up.

M. Jean Wahl, in a more purely descriptive and historical vein, treats the subject of Anglo-Saxon pluralism. His complete and well-documented work opens the most interesting vistas, which may well engage our attention. He

confirms only too strongly the distressing fact that modern philosophy tends to be more and more subordinated to national and geographical divisions. It is certainly curious that, in a time when mechanical and technical progress provides undreamed-of facilities for communication between various countries, philosophy should become very much less universal, much less broadly human, and much more assertive of national peculiarities than it was in the Middle Ages.

Hegel tried to prove that there was a great foreordained harmony between metaphysics and the Prussian State. Is it necessary that philosophy, in order to escape from the 'absolutism' of the Hegelian doctrine, should accept the Anglo-Saxon law of utilitarian and moon-struck impetuosity? "In the eyes of most pluralists," writes M. Wahl, "their doctrine is a national philosophy. James states that he would like to return to the great *English* classic tradition of investigating and challenging all concepts. Pragmatism, according to him, is an English mode of thought."

Where are the happy civilizations of ancient Greece and old-time France, where, in the most national of soils, the most universal and the most broadly human philosophy took root?

But national particularism is not alone in becoming intermingled with this new philosophy. A still more remarkable osmosis tends to combine pure speculation with political exuberance. M. Wahl sagely observes that American philosophy is essentially a philosophy of democracy. According to James, the American nation was founded upon what may be called the American religion – was instituted and developed in the faith that a man needs no master to direct him, and that the common people are quite able, by their own united efforts, to work out their salvation. He attempts to conceive a vision of a world in harmony with democratic ideals, and with the 'great adventure' which democracy stands for in the universe. Anglo-Saxon 'pluralism' is in one sense the metaphysical expression of the ambition for an 'all-pervading democracy'. That is the reason why it pictures the world as an immense swarm, with no established order or hierarchy, the wills of all members being equal in importance – as William James himself might say, quite like a great republican banquet.

But, after all, what is pluralism? A vague term for a vague idea, emotional rather than intellectual in content, pluralism can be understood chiefly by its opposite. It is a reaction from Hegelian monism, which absorbs all diversities into the unity of the 'absolute' – a theory which Bradley popularized in Anglo-Saxon countries. All philosophy that refuses to be 'monistic' is 'pluralistic'.

Pluralism is found in England and America in all sorts of phases. In itself it is distinct from pragmatism, a point upon which James and Schiller are equally insistent. But in actual fact it has been *developed* pragmatically, especially by the author of *Pragmatism* and of *A Pluralistic Universe*.

James is of special interest to us because of this, and because he is himself a perfect example of a '*nature pure*', in the sense that Goethe gave to that term. The perfectly definite combination of puritanism, romanticism, and empiricism that he personifies makes him an eminently representative type. He does his philosophizing openly, I might almost say cynically, through his sentiments and his preferences, even through his temperament – a philosophy being, in his opinion, essentially an expression of temperament. In this he illustrates clearly one of the most fundamental aspects of the pragmatic method. This method demands that the philosopher, in relying upon subjectivity of emotion itself to attain his object, should enter into as material a contact with affairs as is possible; should devote his whole being to knowledge and sensation; should explore the actual with his own powers of desire and emotion, so that he may be able to judge all things in conformity with himself, according to the state of his own activity and his own sensations in contact with them. He abandons himself to emotional gymnastics, as it were; he enlarges, stretches, and expands his psycho-physiological *ego,* to the end that he may play upon it as upon an instrument of knowledge; all in vain, we insist frankly, because this entire effort depends far too much upon the infinite scope of the intelligence, and can never achieve anything beyond a marionette performance entirely out of keeping with philosophy.

William James also teaches a sort of pure nominalism, which, after the manner of Hume and Stuart Mill, but even more decidedly than either of them, he proceeds to apply concretely. He has a native hatred of the abstract, which he is not content to display in theory alone, but which actually passes over into his practical philosophy. He "cramps himself within the concrete."

The world of the pluralist, a chaos of conflicting wills, of contrasts, and of contradictions, is made in the image of his own temperament, of his own romantic imagination, of his own fevered will, of his mystical materialism. Harshness, violence, tempest, floods, heights, depths, risk, peril, combat, danger, terror, sweat, struggle – "human nature straining in all its powers ... on the rack, human nature *in extremis*" – this is the way he sees the world. "Pioneers, O Pioneers!" sings Walt Whitman, "Fresh and strong the world we seize, world of labor and the march, Pioneers! O Pioneers!" A sensuous tumult, indeed, a meaningless commotion. A very tiresome uproar. These great heroes of 'energy', who give such tremendous buffets to the universe, do not know what constitutes the most genuine and powerful activity. Saint Paul in his prison, Saint John on his Isle of Patmos, Saint Gertrude in her cell, – even Descartes in his little library, – and Rembrandt in his studio, – were active in a more intense and dramatic way than all the pioneers of Walt Whitman in the "world of labor and the march."

"A friend," wrote William James, "told me one day that the thought of my universe made him sick." For James, and also for Schiller, reality is not comprehensible except through a multiplicity of heterogeneous truths, and of

incommensurable principles, sometimes contradictory, one quite as legitimate as the other, because reality is only a system of semblances on which our activity is supported; there is a multiplicity of 'realities' and of universes – the universe of every day, the universe of science, one of poetry, one of mythology, and so forth, and so forth; so many distinct and independent universes, more or less intermingled with one another, overlapping or confused according to our method of approach to things and our practical attitude toward the world. It is a concept that does not exactly make us sick, as it did the friend of the philosopher, but it does, we confess, seem to us remarkable for its puerility, and not free from a certain very sophomoric presumption.

If this is the cosmology of integral 'moralism', what is its theology? Here the study of pluralism becomes especially captivating; indeed we may say that the reality surpasses all our hopes. With a charming intrepidity, the pluralist philosophers, especially James (for Schiller is much more modern), offer us an unalloyed type of practical and anti-intellectual theology.

One of the main reasons for the success of pluralism in England and America is the fact that it reinstates the religious instinct and offers support to the naïve and trusting religion of simple souls, which was menaced by the withering atheism of Hegelian monism. It is amusing to note that Hegelism in the first place invaded England in the name of religion and of the higher truths or Christianity, which it was supposed to defend against skepticism and against utilitarian materialism.

However this may be, the Anglo-Saxon pluralists approach all questions concerning God and the ultimate verities with their usual attitude of radical empiricism and unalleviated pragmatic 'moralism'.

God exists, because the notion of a God lends more grandeur to our vision of the world, more majesty to metaphysics, and at the same time makes the world less bleak, and more homelike for us; because, in order to meet life courageously, we need a powerful ally with whom we can exchange personal services.

God is not omnipotent. The omnipotence of God would be incompatible with the absolute individuality of men and women. Does not our liberty imply that we are independent of Him? Do we not defy Him when we do evil? Would there, indeed, be any evil in the world if God had power to prevent it? Henry James was told by his son that God was not sufficient unto himself, that he needed our partnership, that he acted like 'an honest workman', busy with us at a common task.

Such is the God of the pragmatist: a celestial comrade, a powerful factor in the course of events, an ally and also a servitor – a servitor who is likewise exacting, who throws us into danger and into all sorts of unexpected emergencies, in order to develop our highest possibilities.

We have seen how the American pluralists are deliberately reverting to the most primitive religious beliefs and concepts. Yes, but a civilized degenerate is something a good deal lower than a savage. This religion pretends to protect

certain practical attitudes, a certain moral residue of Christianity, in the absence of all the powerful principles and vital certainties of the Christian faith.

"Polytheism is the natural complement of pluralistic philosophy," writes M. Jean Wahl. Possibly he takes the republican philosophy of Renouvier and the truculent hypotheses of William James a little too seriously. But the fact remains that polytheism is really in actual fact directly in the line of development of Anglo-Saxon pluralism – that it is, as it were, its natural culmination; and it is the more remarkable that pluralism does not represent simply the notion of any one philosopher, but that it is a great philosophical movement, a national philosophy.

Can this return to polytheism, as the final result of an exclusively moralistic method of approach to religion and of a radical renunciation of rational speculation in that field, throw any light upon the psychological origin of primitive polytheism? At least, the question is singularly suggestive. There is a sort of wicked pleasure in watching the wise ones of this world tending toward such outrageously degraded concepts, after they have for three centuries harshly accused the Catholic faith of being anthropomorphic, idolatrous, subversive of human reason, hostile to the laws of nature, superstitious in its worship of the saints, a revival of paganism, and the rest. And now, here they are arriving at polytheism – rehabilitating fetishism in the wake of Auguste Comte, and announcing themselves as supporters of an avowed anthropomorphism in the style of Renouvier. Thus we find that James and his pluralistic friends – with their 'crass supernaturalism', with their finite, democratic, and national God, a God who is at once protective, serviceable, redoubtable, and ready to take part in a mysterious exchange which is profitable and advantageous to both parties – are reviving a sort of negroid form of religion.

They mean well, to be sure; they are influenced by the most large-hearted motives; the original longings and aspirations from which their philosophy had its rise are healthy and sound in themselves. But good intentions are not enough in philosophy any more than they are in politics. And there is an essential dishonesty in pretending to solve the most difficult and momentous problems without an earnest search for the truth (*sans vouloir la vérité*), first virtually submitting to the amputation of their own intellectual organ, and then resorting to a method of reasoning chosen simply because of its obvious and radical unsuitability to the subject under consideration. The agnostics, who, first admitting the powerlessness of human reason in such matters, simply refuse to make any statements about divine subjects, are essentially more honest thinkers than these philosophers overflowing with religious zeal, who change the glory of the incorruptible God into an image made like to corruptible man.

PREFACE

Henri Bergson. "Préface." *William James: Extraits de sa correspondance*, ed. Floris Delattre and Maurice Le Breton (Paris: Payot, 1924), pp. 7–12.

Au cours d'une des dernieres conversations que j'eus avec William James, nous vînmes à parler des congrès de philosophie. Un de leurs principaux avantages, lui disais-je, est de nous montrer l'homme que nous connaissions seulement par ses livres, et de nous faire ainsi mieux comprendre ce qu'il a écrit. « Eh oui, me répondit-il; et parfois, quand on a vu l'homme, on n'a plus du tout envie de lire ce qu'il a écrit. » C'est possible; mais de William James je certifie qu'on ne pouvait pas, quand on l'avait vu, ne pas vouloir lire tout ce qu'il avait écrit. Modeste, discret, volontiers silencieux, il avait beau faire: un foyer ardent était là, dont on recevait chaleur et lumière. Jamais je ne me suis trouvé avec lui sans penser à la définition que son compatriote Emerson avait donnée de la personnalité vraie: « une réserve de force, qui agit par sa seule présence. »

On se croira un peu en sa présence quand on lira les lettres dont MM. Floris Delattre et Maurice Le Breton publient aujourd'hui une traduction singulièrement vivante en même temps que scrupuleusement fidèle. Tout de suite apparaîtra ce don de vision directe qui frappait d'abord chez William James, – vision des choses, vision des âmes. Il avait failli être peintre; on a conservé de lui des croquis où se révèle une aptitude remarquable à saisir le trait caractéristique, à noter des attitudes, à fixer des gestes. Mais combien plus perçant encore était son regard quand il le dirigeait sur la vie intériéure! Certes, ses *Principes de Psychologie* sont d'un grand savant: fondateur du premier laboratoire de psychologie expérimentale qu'on ait eu en Amérique, spécialement préparé par ses études médicales à utiliser les ressources de la psychologie pathologique, il a su tirer parti des méthodes les plus neuves. Et pourtant la véritable nouveauté du livre, son originalité profonde réside dans l'application que l'auteur a faite du procédé le plus ancien, le plus connu, le plus banal: l'observation intérieure. Cette méthode semblait avoir fourni tout ce qu'elle pouvait donner; et voici qu'entre les mains de James elle faisait l'effet d'un instrument dont on se fût servi pour la première fois. Ce que nous avions pris jusqu'alors pour une description de faits apparaissait comme un tissu d'idées préconçues, d'hypothèses, de théories; le voile tombait, qui s'interpose chez chacun de nous entre sa conscience et sa personne; on apercevait l'âme humaine à nu. Cette fraîcheur de vision, que nous admirons

dans les livres de William James et qui a fait de lui un psychologue incomparable, nous la retrouvons dans sa correspondance. Elle s'associait chez lui – on en sera particulièrement frappé en lisant ces pages – à une incapacité native d'accepter ce qu'il peut y avoir d'artificiel et de conventionnel dans notre manière habituelle de parler et de penser. Cette disposition d'espirit était communicative: on s'en fût voulu de rien dire à James qui n'eût été directement aperçu, personnellement éprouvé. Seules comptaient d'ailleurs, quand on avait affaire à lui, les choses de l'âme; toute autre préoccupation s'effaçait. J'ai gardé le souvenir de notre première rencontre, depuis longtemps combinée par un échange de lettres à travers l'océan, plusieurs fois contrariée par les circonstances. Je crois bien que nous nous dîmes bonjour, mais ce fut tout: il y eut quelques instants de silence, et tout de suite il me demanda comment j'envisageais le problème religieux.

Ce n'est pas par simple curiosité qu'il s'iritéressait ainsi à la pensée ou, comme il disait, à la « vision » d'autrui. Quand la vision était dégagée de toute idée préconçue, elle lui fournissait des matériaux – les seuls auxquels il tînt réellement – pour l'élaboration de sa philosophic. Il ne voulait rien sacrifier de l'expérience; et comme il croyait à des courants de réalité multiples, plus ou moins indépendants les uns des autres, se juxtaposant et s'entrecroisant pour faire un « univers pluralistique », il allait les chercher dans les consciences individuelles qui en subissaient l'influence et qui les manifestaient. Ainsi fut composé son ouvrage sur *Les variétés de l'expérience religieuse*. Quand parut ce livre admirable, beaucoup n'y virent qu'une série de descriptions et d'analyses, – une psychologie, disaient-ils, du sentiment religieux. Combien ils se trompaient sur l'intention de l'auteur! La vérité est que James voulait prendre ici sur le vif, comme dans une observation scientifique, la force par laquelle l'âme religieuse est transportée ou soulevée. Au-delà de cette âme, mais à travers elle et déjà dans l'ébranlement qu'elle reçoit, il allait chercher l'objet auquel elle s'attache. Toute impression directe lui était ainsi matière a philosopher. Par là s'explique la sympathie avec laquelle il se penchait, pour les regarder, sur les thèses qu'on opposait aux siennes, quand elles lui semblaient réellement traduire une impression. Nous parlions un jour des philosophes qui ne croient pas à l'action libre, au libre choix. « Ceux qui pensent ainsi, me dit-il, sont tout bonnement des hommes qui n'ont jamais eu le sentiment vif d'agir, soit que leur vie toute spéculative ne leur en ait pas fourni l'occasion, soit plutôt que leur nature les incline à se laisser porter par les circonstances. Ne leur reprochons pas de ne pas entrer dans nos vues. Ils nous livrent les résultats de leur expérience, et ils nous rendent service en le faisant. »

La philosophie a presque toujours été une grande simplification du réel. Avec Platon, elle remonta des choses individuelles à des genres, et de généralité en généralité prétendit s'élever à une idée capable de tout embrasser. Plus tard, considérant la diversité des faits plutôt que celle des choses, elle voulut, de loi

en loi, atteindre un principe d'explication universel. Mais, dans un cas comme dans l'autre, elle ne voyait dans la réalité que l'expression multiple et changeante de la vérité, laquelle serait une, simple, systématique. Elle se détournait de ce qui donne aux faits leur variété, aux choses leur individualité, au monde ses aspects pittoresques et changeants. A l'artiste de s'en préoccuper, disait-on, et non pas au philosophe; ou bien alors c'est à la négation même de la philosophie, sous le nom d'empirisme, qu'on aboutira. La grande originalité de Wil1iam James est d'avoir retenu cette diversité, de s'être attaché à cette variété, et d'avoir pourtant abouti à une philosophie. C'est qu'il se représente la connaissance philosophique et scientifique, la vérité en général, sous une forme nouvelle. Son « pragmatisme », sur le sens duquel on s'est à tel point mépris,[1] définit précisément la conception de la vérité qui est impliquée dans sa manière de philosopher.

Il ne peut être question de l'exposer, pas plus que de résumer la doctrine. Ceux qui connaissent la philosophie de James la comprendront mieux après avoir lu sa correspondance. Les autres trouveront ici, avec une extraordinaire abondance de réflexions instructives et suggestives, intéressantes pour ceux-là même qui s'intéressent le moins aux généralites philosophiques, la meilleure introduction a l'oeuvre du maître. Tous verront comment la doctrine s'est constituée, du premier au dernier jour de la vie intellectuelle de James, par le développement organique d'un germe où elle préexistait. Le même élan qui porta William James de l'anatomie et de la physiologie à la psychologie, de la psychologie à la philosophie, le souleva de plus en plus haut vers une conception ou mieux vers une vision du monde qui embrassait tout le donné, qui tenait compte du désordre et de l'ordre, qui faisait une large place au hasard et à la chance, et qui, sans optimisme ni pessimisme, prenant la réalité avec le bien et le mal qui s'y trouvent, la jugeait indéfiniment perfectible par un effort insoucieux du risque. Doctrine séduisante et fortifiante, que le philosophe, comme on va voir, a vécue avant de la formuler.

On se plaît à en reconnaître l'originalité. Peut-être n'en a-t-on pas encore mesuré toute la profondeur, toute la portée. La postérité mettra William James à sa vraie place. Elle dira sans doute que ce penseur fut un des plus grands, et que nul ne fit un plus vigoureux effort pour étreindre la réalité.

[1] Voir notre introduction à la traduction française de l'ouvrage do W. James sur *Le pragmatisme* (*Bibliothèque de philosophie scientifique*).

WILLIAM JAMES AND THE MAKING OF PRAGMATISM

F. C. S. Schiller. "William James and the Making of Pragmatism." *The Personalist* 8.2 (April 1927): 81–93.

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At the recent Congress of Philosophy at Harvard I was considerably surprised to hear what very modest and apologetic estimates were put on American achievements in philosophy by some of the spokesmen of America in welcoming the representatives of foreign countries. I could not but think this modesty a sacrifice of truth to politeness, when I reflected first on the paucity of the really important discoveries which form the bright spots in the history of philosophy and, secondly, on the very great importance of one achievement which indisputably stands to the credit of America. I mean, of course, the development of Pragmatism, and as I was myself involved in it, and can testify to some aspects of it which are not generally known, and am moreover unfortunately growing old, I wish to avail myself of this opportunity in order to give reasons, before it is too late, for my conviction that the origination of Pragmatism was one of the major events in the history of thought, and to put on record certain incidents connected with the origination of Pragmatism which came within my personal knowledge.

But before I do so, let me first justify my remark about the rarity of really important novelties in the history of thought. They cannot indeed be enumerated on the fingers of one hand, but one does not need to be four-armed, like an Indian God, in order to accommodate all the conceptions which can be accounted first-class discoveries.

I find I cannot recognize more than *nine* of such discoveries. Of these I should credit the first, the *Absolute* or *One* of Monism, to the Hindus, although a case may perhaps be made out for Parmenides for an equal share in this discovery. Still it was in India that the ethical and logical implications of this monistic line of thought were worked out in their completest and most consistent form. The next two, *Pure Spirit* and *Universals* must both be set down to Plato. Aristotle, another Greek, is the undisputed father of *Formal Logic*. In Western thought, at any rate, Descartes, a Frenchman, is the first

philosopher to discover the *Self*; though it had long been familiar to language and long been exploited in the East, and with true philosophic modesty even been identified with the Absolute. The honor of discovering the *Critical problem*, and the claim that the epistemological question takes precedence over the ontological, must I think be divided between England and Germany, between Locke and Kant, though neither of them succeeded in constructing a consistently critical philosophy, though not even their followers could swallow either system as it stood, and though, in some aspects, both seem to have been anticipated by the Sophists and Sceptics of antiquity. On the other hand a definite recognition of the *Problem of Value* seems to be first traceable in Germany. Its origin is obscure, but it is clearly post-Kantian and post-Hegelian; and as its significance is still largely unexplored, it may be said to be still at the beginning of its philosophic career.

Of *Darwinism* the effective birth-place is England, as that of *Pragmatism* is America: but in both these cases it was found, after the new doctrine had won its way to recognition, that anticipations of it, often of a very definite kind, could be traced all the way back to the Greeks. So far, the earliest Darwinian on record is Anaximander, and the earliest pragmatist, Protagoras: but they were both so far ahead of their times that their words fell upon deaf ears. This is due to a persistent feature in human psychology. The first hundred times or so that a new idea is ventilated, it is simply disregarded, and treated as though it had never been; the one hundred and first time. when some forceful genius gets the world by the long ears and makes it listen, the learned can always show that it was anticipated long ago. So they are satisfactorily confirmed in their conviction that there is nothing new under the sun! Nevertheless Pragmatism was as new as anything could be in the fog-laden atmosphere of philosophy.

Under these circumstances the best proof of an idea's novelty is to be found in the completeness and grotesqueness of the way in which it is misunderstood; and certainly, judged by this test, the novelty of Pragmatism ranks amazingly high. Its putative parent, Peirce, was so shocked by the fame of the doctrine fathered upon him, and so dismayed by the Herculean exploits which it accomplished even in its cradle, that he was actually driven to disown his paternity, and to take refuge in a "pragmaticism" which, he said, was ugly enough to be left severely alone. He has thereby provided philosophy with a superb example of the folly of a *gran rifiuto*, though he has not yet found a Dante to damn him for it. Its real progenitor, James, could hardly restrain his nearest and dearest pupils from participating in the congenial labor of misrepresenting what they had never understood.

The whole of Continental Europe, with a perhaps pardonable ignorance of English idiom, cried out that the demand that truth must "work" and "pay" was just a piece of the banausic sordidness and vile commercialism of the American mind, endeavoring to degrade the highest and most sacred spiritual

values to mere matters of dollars and cents. Even the champions of the Hegelian Absolute found it an intolerable strain upon its (theoretically infinite) elasticity to swallow the new doctrine and to absorb, transcend, transmute and transmogrify it in its all-engulfing maw. I myself can well remember what an uproar was aroused at the Heidelberg Congress of Philosophy in 1908 by my innocent remark that Pragmatism was a philosophic movement which had originated in America. The Germans took it as an intolerable piece of impertinence for a philosophic movement to originate in America, and it was no use pleading that this happened to be sheer historical fact.

Amid this hubbub no one noticed that the very doctrines which all were furiously denouncing had long been before them, and indeed had excited general and unstinted admiration under another name. So long as William James enunciated his views under the label of "psychology," what he said was accepted and applauded; but when he called the same views "philosophy," he was decried as a subverter of the pillars of the Temple of Truth. For a detailed proof of the correctness of this comment I may refer to an excellent little book which deserves to be better known in America, *The Philosophy of William James*, by H. V. Knox.[1] It is largely a string of quotations, and expounds James's Pragmatism almost wholly in his own words; and the best of the joke is that he has selected his most significant quotations from the *Principles of Psychology!*

Now that was in 1914, and by that time some of us had "caught on." I myself cannot claim to have been much less obtuse than the general mass of philosophers. John Dewey alone had had the perspicacity to detect the philosophy that was contained in James's psychology and to derive his "instrumentalism" independently from that fountain head. I myself had been delighted with James's *Will to Believe*, and had expressed myself pretty freely in a review which appeared in *Mind* for October, 1897. This may have done something to attract the attention of English philosophers to William James, who was at that time practically unknown, at least in Oxford. Still I could not then claim any status as a disciple of James. I had only met him about twice; though five minutes after meeting him the first time I found myself talking to him as if I had known him all my life. It ought to be impressed on all American students of philosophy, from their Freshman year on, what a very great man James was. I have only met two men I should call really great, and Arthur Balfour is the other. Still, when the California Lecture on *Philosophical Conceptions and Practical Results* baptized Pragmatism and flung it into the stream of philosophic controversy, I could in no wise set up as an authority on the meaning and the mind of James. I knew that he was a man after my own heart, but there were others far better qualified than I to pronounce upon his views.

[1] London, Archibald Constable, 1914.

Dickinson Miller was one of these, a friend and a favorite pupil of James. He was also a friend of mine, and at that time I knew him better than I knew James. In January, 1899, he wrote a subtle and impressive article in the *International Journal of Ethics*, called *The Will to Believe and the Duty to Doubt*, criticizing the doctrine of the will to believe, and not long afterwards sent it to me with a request that as an admirer of James's I should write a reply to it. He had, it seems, asked James to reply, but the latter had refused.

I read the article and wrote to Miller that I was aware that he knew James much better than I did but that I could not but think that he had seriously mistaken James's meaning, giving my reasons. Miller sent my letter to James, and asked him to decide between us. To my great delight, James decided in *my* favor. Then for the first time did I realize the enormous capacity of the philosophic mind for misconstruing James. It would otherwise never have entered my own mind that the particular misconception Miller had fallen into was even possible. The point at issue between us was one which still plays a part in the attacks on Pragmatism, and for which there has never seemed to me to be the slightest justification. It concerned the question whether a pragmatist was entitled by his theory to believe whatever he liked, or in other words whether Pragmatism failed to distinguish between a truth and a truth-claim. I pointed out to Miller that he had failed to allow for the empirical side of James's doctrine of the verification or refutation of a belief by experience of its working.[2]

This still seems to be one of the major difficulties its critics have with Pragmatism. For apriorism is not so much a doctrine, or even a faith, as a habit or aberration of mind. Whether or not there are *a priori* truths there are certainly *a priori* prejudices. And these are so impenetrable that they cannot even conceive the idea that experience of its working may be regarded as relevant to the truth of an idea. And so they are quite impervious to the neatness and beauty of the suggestion that the secular dispute between apriorism and empiricism might be terminated by an equitable compromise, which found a use for *both* of them, admitting that there were *a priori* truth claims galore, and in fact that nearly every one was chock full of them, but not that they were on this account self-proving and self-evident truths, and able to dispense with testing by their working in experience.

As I reflected on the situation, this voluntaristic compromise, which alone seems to assign a meaning and a function both to our anticipations of experience and to their corroboration and confirmation by experience, and which moreover could bestow logical respectability on the all-pervasive activities of our will to believe, seemed to be exactly what was required. Accordingly when I had occasion to write a contribution to the volume of

[2] Miller does actually quote one of the many passages in James which insist on this, but shows that he has not perceived its significance.

Essays subsequently known as *Personal Idealism*, I chose this as my subject, and entitled it *Axioms as Postulates*.

I conceived my task as that of tracing throughout the established structures of the intellectual world the manifold operations of that volitional activity whose existence and potency James had revealed, under the name of the will to believe, in a single case. And I was hopeful that by so universalizing it I could render its recognition easier and more palatable. For I had been taught as a youth that this was precisely the way in which Kant had overcome and confuted the scepticism of Hume. Hume had shown, unanswerably, that causality was not an objective fact of observation but a subjective infusion into the series of events. He had inferred that it was an illegitimate addition which vitiated our knowledge. But Kant had turned the edge of Hume's contention by accepting its premises and drawing a different conclusion. Subjective additions to our data were not limited to the case of causality. They were to be found in every corner of the field of knowledge. Indeed it was impossible to cultivate this field, without the use of the elaborate machinery, which Kant proceeded to describe with so much detail and obscurity that thousands of philosophy professors have lived on the *Critique of Pure Reason* ever since. This Kantian machinery of Categories, and so forth, was in a sense subjective: but it generated the only sort of objectivity which it was possible to recognize or needful to know. So the lethal weapon with which Hume had hoped to strike a deathblow at knowledge, not only became innocuous in Kant's hands, but actually essential to the only objectivity that existed or had meaning.

So why should one not, thought I, repeat this Kantian feat and turn the will to believe, which intellectualistic system-builders had so long rejected, into the keystone of our edifice? It seemed conceivable that even Kantians might welcome such an enterprise. For, after all, Kant had not left his system so logically complete, so perfectly symmetrical and harmonious, as he had tried to make it. Even the most faithful Kantians could not but perceive that the system was traversed by a glaring inconguity. There was no logical connection between Kant's treatment of the Pure and of the Practical Reason. The latter, though psychologically rooted in Kant's idiosyncrasy, had very much the air of an afterthought, attached to the former by a transparent artifice. But, if it were taken seriously as a logical principle, it clearly embodied a thought which transcended intellectualism altogether, and could be made to yield quite a novel account of the mental activity which gave form and meaning to the data derived from experience The process of postulation, which Kant had admitted in only a niggardly and reluctant way for the special purpose of getting himself out of a difficulty, could be construed more widely and generously. It could be given logical status, and shown to enter into the operation of all our cognitive functions. It could be universalized like the will to believe, and identified with it, or traced to a common root with it in our volitional nature.

It would then be capable of generating the whole of the mind's *a priori* furniture and of accounting functionally for the whole structural *a priori*. The result would be a completely and consistently *voluntaristic* theory of knowledge such as had never yet been formulated.

So I set to work to show how all our *axioms* might be conceived as *postulates* which had suggested themselves as desirable if true, and had succeeded and survived, for transparent reasons, and could all be traced to the various activities of our will to believe. This is the genesis and history of my essay on *Axioms as Postulates*.

Of course I ought to have expected that the results would be disappointing. They always are. But they ought not to have been so disappointing, if the Kantians had been more seriously concerned with the truth of Kant and the coherence of his system. They seemed to be content with tracing its history and tabulating the dates on which its various sections might be presumed to have been written, in short with leading the easy, merely parasitic, life of the industrious commentator. For the analogy which seemed so clear to me, between Kant's relation to Hume and my relation to Kant and to James, they had no eyes at all. And the historians of philosophy, those most stalwart devotees of the copy-theory of truth, continue to represent the epistemological alternatives as two, the rationalist and the empirical, both equally intellectualistic, and equally inadequate. The possibility of a synthesis, which would transcend this antithesis by taking both "reason" and "experience" in a voluntaristic way, continues to be ignored. No doubt it is felt that to recognize it would be too disturbing to traditional classifications, and would upset too many familiar "categories." But is it not one of the saddest tragedies of philosophy that it should be so much easier for a rich man's automobile to pass the portals of the Heavenly Jerusalem than for anything new to get into the histories of philosophy and for anything old that has once got into them to drop out?

But to continue my reminiscences: after having been rebuffed in my well-meant attempt to mediate in the epistemological wrangle between "rationalism" and "empiricism," I turned my attention to the excogitation of a suitable *name* for our new manner of philosophizing. For it had very soon been borne in upon me that "pragmatism" was a thoroughly bad name, and almost sufficient to damn any dog that bore it. Not only did it not explain itself, but it did not even, at a first hearing, suggest any hint of the direction in which its meaning was to be sought. All that it could suggest was indeed definitely misleading. Etymologically, it was derived from *Pragmata*, but its etymology told one nothing about what it thought about "things." To those ignorant of Greek, it conveyed a connection with "practice" which was a dangerous half-truth; to those familiar with obsolescent English it was associated with "knavery"; to Germans it seemed to tamper wantonly with the well-established meaning of an existing term. Worst of all, it took about

half an hour to explain its meaning properly, and how rarely did one have that half-hour granted one!

So considering all these things, I determined to adopt the term "humanism," which seemed significant and apt, and was not encumbered with old senses likely to interfere and to be confused with its philosophic use. It had moreover already been employed in senses very cognate to that which I wanted; sporadically indeed, but by good authorities. Thus Pringle-Pattison had used it in his *Man's Place in The Cosmo?*[3] and Dickinson Miller had actually applied it to James's philosophic attitude in the very article that had provoked my intervention.[4]

Accordingly I proposed to James that he should change the name to Humanism. But he refused, on the ground that the name Pragmatism had already been taken up and had established itself. Of course it had been taken up with joy by the adversaries of the new way of thinking; for they had realized with terror how dangerously popular its appeal might easily become, and perceived with delight what a handicap an obscure technical name like "pragmatism" would be. Their really crushing criticism which they never uttered in public but used to whisper confidentially into the ears of the elect, was that Pragmatism was "vulgar ;" how fortunate then that these heretical vulgarians had been foolish enough to choose to fight under so deterrent a banner!

It was a misfortune also that John Dewey and his vigorous Chicago School had no more attractive name to offer. They did yeoman service to the cause, and *almost* forced the academic world to treat it with the respect which is always accorded to systematic technicality. For the academic pedant always thinks in his heart, and occasionally all but says, "What I can understand, I despise." Now he frequently found Dewey hard to understand, and respected him accordingly; whereas James was such easy reading that the typical professional never attended properly to what he said, and invariably misunderstood him. Also Dewey's instrumentalism never inspired fear; even apart from its cumbrous name, it never threatened to become unduly popular. Though not so bad as "pragmatism," "instrumentalism" was a bad name too. It was too long, and ill equipped with cognate adjectives and verbs, and on the whole it is not surprising that it did not supplant "pragmatism" in philosophic use.

James, I think, realized, when it was too late, what a bad name "pragmatism" was. At any rate, so I was assured by Mrs. James in a precious letter which she wrote me, not long before her death, in response to my *Quarterly Review* article about her husband's *Letters*. This is how Mrs. James put it. On August 16, 1921, she wrote:

[3] P. 61.

[4] P. 176.

> I have read three times over your beautiful review of the Letters, and cannot tell you how it touches me. You are so much nearer to William than anyone else, and you speak for him as he could not for himself.... You are right in what you say of confessing to obligations which he never owed. It used to puzzle me in so strictly truthful a nature. Even Charles Peirce said to me "I never thought, much less taught, the views William says I did. I have very different opinions." For years poor C. S. P. had appealed to William for help until at last he acquired the habit of tugging that poor derelict through troubled waters. In one of the last quinquennial catalogues, Peirce changed his middle name from Saunders to Santiago. It was long before I understood that it was a way of calling himself St. James, but there it stands *Charles Santiago Peirce*. When William was a student in the chemical laboratory, and absorbed in philosophy, he found Charles Peirce a stimulating acquaintance; so when years after William sought to give a name to the faith he had long held, he glanced backward and said to himself, "I must have owed Pragmatism to Peirce." I protested and begged him not to handicap a cherished belief with so wanton a name. He was sorry afterwards, and preferred Humanism.

I shall never forget a confidential little lunch in my rooms at Oxford, to which I invited my friend, H. V. Knox, to meet James in order that we might both ask him what precisely he had owed to Bergson. He told us. When he had done, we both cried out, spontaneously and simultaneously, "But these are the very things which *we* have learnt from *you!*" He then admitted that it was possible that through the *Données Immédiates de la Conscience* had come out a year before the *Principles of Psychology*. Bergson might have read his earlier articles in *Mind* and have assimilated their ideas, and then have developed them in an original way which James thereupon found surprising and stimulating. I am afraid, therefore, that even though he did recognize that the name "pragmatism" was a mistake, his chivalrous willingness to give his enemies any verbal advantage they chose to claim, would always have kept him loyal to his mistaken choice!

Personally I found it quite easy to adapt myself to the situation. I could accept "pragmatism" as a generic term, of which "instrumentalism" and "humanism" could be species, as could an indefinite number of other views, more or less completely pragmatic, such as those of Poincaré, Mach and Ostwald, or more extreme, like those of Nietzsche and Vaihinger. For it was evident that, theoretically at least, there might be as many pragmatisms as there were pragmatists, and that Professor A. O. Lovejoy had grossly understated their numbers in limiting them to thirteen! For it was an essential feature of "pragmatism" to be recalcitrant to the scientific fiction which depersonalizes truth. If every "truth" originates with an individual thinker facing an actual problem and choosing the best solution that presents itself

to his mind, and framing the best judgment for containing it that he can conceive, and succeeding in winning the assent of others to the goodness of his judgment, it surely follows that its depersonalization is a fiction. It is obviously convenient and works pragmatically over a large field of investigation and no one would dream of denying its uses: still its legitimacy may be challenged at any point in any inquiry, should occasion to do so arise by our *agreeing* to approve each other's judgments and to sink our differences.

Nor can I see why this result should be decried as sceptical. It need not form a bar to understanding, any more than the fact that in using a common language we all have our personal, social and national peculiarities of voice, inflexion and pronunciation. It does not preclude agreement, but rather favors it. For it substitutes agreement for coercion, value for necessity, as the hall-mark of truth. And it brings out a social side to all truth-seeking, which should be a comfort to the "lone beast dwelling in his individual burrow," which James declared the philosopher to be, with so much painful truth.

This humanist truth, moreover, is not only social, but also democratic. By admitting that every center of experience should be heard from, because it may yield a contribution to the common store, it grants universal suffrage in the realm of thought, though it does *not* imply equality of value. For our individual guesses at reality and truth are inexorably judged by the value of their results. Every one has an inalienable right to his own opinion, to his personal reaction upon his world – until he can get a better. For the right to his opinion is the correlative of his duty to improve it. James was well aware of this, and was a true democrat who loved to appeal to the people, even in the most highly oligarchic preserves and the remotest recesses of philosophy. He summed up his position in the words of his immortal carpenter: "There is very little difference between one man and another: but what little there is is very important."

Moreover, in his democratic spirit he entirely agrees with his far-off ancestor, Protagoras, who also proclaimed the universal right of every man to find his own truth, and was martyred for making man the measure of all things by the Athenian oligarchs, twelve years before the vindictive democrats in their turn forced Socrates, the anti-democratic philosopher of authority, to quaff the hemlock-bowl! It is perhaps fortunate for some of us that the connection between philosophy and politics is no longer so direct! Philosophy has become less dangerous since those times; but it is now in danger of being merely dull. If, however, American philosophy, if philosophy anywhere, will only follow the lead of William James, it will not only escape this danger, but may again resume its ancient hegemony over the human strivings to attain to fuller and nobler forms of human life!

THE PLACE OF WILLIAM JAMES IN THE HISTORY OF EMPIRICISM

Ralph B. Perry. "The Place of William James in the History of Empiricism." *Proceedings of the Seventh International Congress of Philosophy*, ed. Gilbert Ryle (Oxford: Oxford University Press, 1931), pp. 480–486.

William James conceived it to be his role in philosophy to save empiricism through greater fidelity to its own tradition and standards.

The teachings which commended the British school to James and constituted its praiseworthy empiricism were two: the experimentalist doctrine that the events of sense-perception offer the only proof of existence; and the allied experiential doctrine that the essence of what exists, and the meaning of anything whose existence is debatable, are composed of the content of sense-perception. These are germinal doctrines, conceived by Locke, but reaching their full growth only in Hume and Mill. Thus Locke, while he affirms the peculiar 'adequacy' of the simple ideas of sense directly produced in us by existing things, nevertheless recognizes "in intuitive knowledge of our own,"[1] and a "demonstrative" knowledge of God's existence.[2] In Hume and Mill, on the other hand, the experimentalist test is so rigorously applied that even the existence of the external world has become highly questionable. As to the experiential doctrine of essence and meaning, James singled out for special approval Locke's transfer of the question of personal identity from the debatable ground of 'substance' to the evident ground of conscious selfhood. But the same Locke who thus reduced personal identity to terms of specific and plainly identifiable experiences was more indulgent towards the ideas of spiritual substance, bodily substance, power, and cause. He was candid enough to be troubled by them, but not radical enough either to reject them or to identify them with those data which were taken as evidence of them. Berkeley renewed the empiricist attack by reducing material substance to sense-perception. Hume and Mill completed the conquest by submitting spiritual substance, power, and cause to the same drastic treatment. James was not, as we shall see, satisfied with the account which these writers gave, but he credited them with having undertaken the task on empiricist principles.

[1] *Essay concerning Human Understanding*, 1853, p. 268.

[2] Op. cit., Book IV, Chapter iii, paragraph 21.

They looked for the phenomenal disclosure of these alleged entities, with the intention of reducing their meaning to that disclosure.

Viewed under one aspect, then, the course of British thought from Locke to Mill was conceived by James as a progressive revelation of the principles of empiricism and an extension of their application. Viewed from other angles, however, it was a transition from bad to worse – a progressive obscuring of empiricist principles, and contraction of their application. Thus there is a change from the liberal metaphysical and religious scope of the philosophies of Locke and Berkeley to the positivism of Hume and Mill, and to the scientific naturalism with which this positivism came to be associated. James's complaint of latter-day empiricism on this score pervades the volume of essays entitled *The Will to Believe*, and is explicitly formulated in the preface to that volume. He there speaks of "the half-way empiricism that is current under the name of positivism or agnosticism or scientific naturalism," meaning that it fails to apply to the scientific view of the world the fundamental empiricist maxim of regarding the "most assured conclusions concerning matters of fact as hypotheses liable to modification in the course of future experience."[3]

James's further complaint against the classic British empiricism was originally formulated in the essay *On Some Omissions of Introspective Psychology*, published in 1884, in which the author referred to the sensationalists and associationists who "end with the philosophical melancholy of a Hume at the conclusion of his treatise, or with Mill's dismal confession of failure at the close of his chapter on the Psychological Theory of Mind."[4]

He afterwards summarized this complaint as follows:

"Now, ordinary empiricism, in spite of the fact that conjunctive and disjunctive relations present themselves as being fully co-ordinate parts of experience, has always shown a tendency to do away with the connections of things, and to insist most on the disjunctions. Berkeley's nominalism, Hume's statement that whatever things we distinguish are as 'loose and separate' as if they had 'no manner of connection', James Mill's denial that similars have anything 'really' in common, the resolution of the causal tie into habitual sequence, John Mill's account of both physical things and selves as composed of discontinuous possibilities, and the general pulverization of all Experience by association and the mind-dust theory, are examples of what I mean."[5]

[3] *The Will to Believe*, 1898, Preface, pp. vii, viii.

[4] *Mind*, 9 (1884), pp. 8–9. Cf. also pp. 3–4, 26.

[5] *Essays in Radical Empiricism*, pp. 42–3. In this later period, James also recognized and repudiated the tendency to solipsism, evident in Berkeley and Mill, and attributed it to the same failure to make note of experiential conjunctions. Cf. *ibid*., pp. 76 ff.

In other words, empiricism, which ought of all philosophies to possess an alert sensibility, failed to find that which was under its very nose, and through this failure ended in shipwreck or suffered the even more mortifying fate of being rescued by its traditional rivals. Such being the failure of the major school of empiricism, James found only two men who seemed to him to have understood its causes and to have pointed the way to their removal. These two great reformers of empiricism and "foremost contemporary philosophers" of his time, were Charles Renouvier and Shadworth Hodgson.[6]

In 1872, writing to the author for the first time, he indicated the hope that Renouvier's philosophy, "par son côté phénoméniste," might attract English thinkers of the reigning empirical school, and divert this school from its current tendency to determinism and materialism. James's Renouvier was first of all "the greatest living insister on the principle that unity in an account of things shall not overwhelm clearness";[7] the philosopher who identified the real with the apparent, and knowledge with evident presence; who substituted 'representations' for substances or other hidden entities; who construed representations as embracing in their inherent duality of aspect both the subjective and the objective, and as standing in perceivable relations to one another, "multiple, composite, linked, interlaced."[8] Even Renouvier's doctrine of freedom itself is primarily an empiricist doctrine. It turns upon the nature of volition, and here James adopted Renouvier's view (the view of an "out and out phenomenist") that volition consists in "the stable survival" and motor discharge of representations.[9] Freedom is further supported by Renouvier's finitism and pluralism, this metaphysics being a direct outgrowth of his empiricist or phenomenist theory of knowledge. But it is supported, above all, by an empiricist interpretation of belief. The empiricist, renouncing all theoretical certainty save that felt in the immediate presence of particular facts, will recognize the inevitable discrepancy between the narrow range of theoretical certainty and the broad assurance of belief; and will conclude that the only sort of justification which such an excess of assurance over evidence can possess is a moral justification.

Shadworth Hodgson, like Renouvier, looked to the will, or practical reason, to offset the metaphysical limitations of empiricism. But to James,

[6] "The Sentiment of Rationality," 1879, *Collected Essays and Reviews*, p. 133. Cf. also pp. 26 ff.

[7] James, "The Sentiment of Rationality," *Mind*, 4 (1879), p. 325. Cf. "Bain and Renouvier," *Collected Essays*, p. 29.

[8] Renouvier, *Traité de Logique général*, vol. i, p. 77.

[9] *Ibid*., p. 31; and *Pluralistic Universe*, p. 391 (note).

Hodgson was essentially the philosopher who keeps insisting that realities are only what they are "known as."[10] Like Renouvier, he wages war on behalf of phenomena against all substances and substrata. "The least and lowest meaning of the term Being," without which it would be meaningless, he says, "is perceivability."[11] While James cited him as an exponent of the general experiential principle, the influence of Hodgson is most evident in matters of detail,[12] illustrating the power of that principle to transcend the sensationalistic atomism of Hume.[13] Thus Hodgson proposes to consider the distinction between subjective and objective as a distinction appearing on a certain level of reflection, *within* the field of consciousness, and involving no reference beyond that field.[14] Similarly, the difference between concepts and percepts consists in the fact that every portion of the phenomenal field has both an 'actual character', and an 'expectant character' – "expectant as it waits for the completion of its relationship to other portions."[15] Again, consciousness is originally through and through temporal, and the substitution of a static juxtaposition of parts is an effect of analysis.[16] The minimum of consciousness is a 'process- content', a change or transition, which looks forward and back, having "as it were, one foot in the present, one elsewhere."[17] That which is at first in prospect shifts smoothly and uninterruptedly into retrospect. Thus the stream of experience is both continuous and interpenetrating. This is James's Hodgson, the apostle of the new empiricism.[18] There was

[10] *Pragmatism*, p. 50.

[11] *Metaphysics of Experience*, 1898, vol. i, pp. 262, 455. Cf. *The Method of Philosophy*, 1882, p. 19. In his *Philosophy and Experience*, 1885, Hodgson uses the term 'experientialism' to designate the radical appeal to experience or consciousness as distinguished from the positivistic or naturalistic empiricism. In fact, Hodgson uses the term 'empiricism' habitually for what is defective rather than for what is essentially sound in the philosophical school to which he attaches himself. Thus what is to James a word to conjure with is to Hodgson a term of disparagement.

[12] It was in 1910, reminiscently, and in writing to Hodgson himself, that James coupled that philosopher with Peirce as one of the two sources of his pragmatism; cf. *Letters*, ii, p. 328. In a letter to Renouvier, 8 May 1882, James wrote, "I find that all the good he does me is from details."

[13] Cf. Hodgson's *Time and Space*, p. 33. James's copy of this book is inscribed with the date 'December, 1875'. Cf. also *Philosophy of Reflection*, 1878, vol. i, p. 11.

[14] Cf. *Metaphysics of Experience*, vol. i, Book I, Chapters v–vii.

[15] *Philosophy of Reflection*, 1878, vol. i, p. 294.

[16] *Ibid*., p. 252.

[17] *Metaphysics of Experience*, vol. i, pp. 35, 42; cf. *Philosophy of Reflection*, vol. i, pp. 252–3.

[18] Cf. e.g. James's reference to Hodgson in *Essays in Radical Empiricism*, p. 48.

another and to James a recreant Hodgson, who denied freedom, who reduced mind to dependence on body, who made inferences from consciousness to realities beyond, and was even tainted with monism. From this 'rationalistic' Hodgson, as from the a *priori* and speculative Renouvier, James was separated by a gulf that widened with the years and converted his relation into one of personal affection and reminiscent gratitude.

Let me now, in conclusion, briefly summarize James's own philosophy viewed as a neo-empiricism, descending legitimately from the British School, but avoiding the unhappy fate of Hume and Mill and pointing the way towards a constructive and adequate philosophy. I shall continue to divide empiricism, for this purpose, into two major and complementary ideas: the experimental theory of existential knowledge, and the experiential notion of essence. The experimental theory of knowledge is the theory that knowing initiates ideas of existence which it submits to existence, and which existence itself accepts or rejects in the events of sensation. The experiential notion of essence is the theory that existence shines in its own light, or reveals its native quality in certain authentic modes of immediate apprehension such as perception.

James's experimentalism, reflecting an early Darwinian influence, excludes from the beginning the view that mind is a passive receptivity to the external order.[19] On the contrary, he says, mind is active and inventive. But every cognitive project is on trial and bound to submit itself to fresh findings, no matter what other credentials it may possess.[20] It places itself at the mercy of specific fact which it cannot control. In forming and trying hypotheses the mind is not only active, but interested. It tries what it hopes is true. If it refused to trust its interests, it would believe nothing; for belief at the moment of its occurrence invariably exceeds the given facts. Since the subjective factor is unavoidable it should be consciously recognized, in order that the appropriate moral standards may be applied to it. There are important fields, such as religion, in which the sensational test is remote or impossible; and in these fields the moral test becomes peculiarly important. That even here, however, fact-finding takes precedence of faith is clear from the importance which James attaches to the empirical evidence for God and freedom. Thus James's fideism grows out of his empiricism. It is a corollary of the generalization of the experimental method, and compensates for the limitations of empirically verifiable knowledge, being in this role substituted for the alleged *a priori* certainties of the rationalistic schools.

The other half of James's empiricism is his experiential metaphysics or notion of essence. Experimentalism takes account of knowledge by concepts, that is to say, the beliefs of everyday life, together with the systematic conclu-

[19] "Spencer's Definition of Mind as Correspondence," 1878, *Collected Essays and Reviews*, pp. 43 sq.

[20] *Will to Believe*, Preface.

sions of science and philosophy. But such knowledge reflects, culminates in, and verifies itself by, knowledge of another sort, a knowledge in which existence reveals its nature directly. Experimentalism deals with the limits of this more authentic knowledge, and the methods of transcending them. Experientialism, on the other hand, deals with the richness of this sort of knowledge, above all with its inclusion of relations, for the alleged lack of which it has been condemned by opposing schools. James elaborates this general thesis with scrupulous attention to detail: in his nativistic theory of tri-dimensional space, his doctrine of the specious present as embracing temporal sequence, his identification of causal activity with a unique pattern or train of sensible data, and in his interpretation of the self's unity and reflexive consciousness in terms of a 'judging thought' that takes its place in the common stream. The traditional chasms which other schools left unbridged, are *filled* by James with a positive, experiential content. Mind and body are differences of external relation and context attaching to identical terms, which are given, but are in themselves neither mental nor bodily. Thought's reference to its transcendent object is translated into routes from the nearer to the remoter portions of the one experiential field, or into a feeling of the direction and destination of such routes. Thus, by the inclusion of experiences of tendency, meaning, and relatedness, by a recognition of the more elusive fringes, margins, and transitions that escape a coarser sensibility, or a naïve practicality, or an unconsciously artificial analysis – by such inclusion, the field of immediately apprehended particularity becomes a self-contained continuum which is qualified for the role of metaphysical reality.

Reality construed empirically as an experience-continuum has unity both of kind and of connexion. But it is none the less a plurality, and not only because there is a moral interest in thinking it so, or because a world that can be known piecemeal must be divisible in its nature – it is a plurality empirically. The relations by which the world perceivably holds together are *de facto* or adventitious, rather than necessary, relations. It is characteristic of the totality of existence, as empiricism finds it, that its parts compose and yield the whole, rather than that a prior whole manifests itself in predetermined parts. Such a world is subject to change initiated locally, as, for example, in the human will. It is not only a fluid, but a plastic world in which there is a third alternative to resignation and despair. Not being essentially indivisible it may be praised with discrimination where it is praiseworthy, and worshipped where it is divine.

This continuous field of given existence, as James depicts it, is far removed from the sensationalistic atomism of the classic empiricists. But it was intended none the less as a correction and amplification, not as an abandonment, of the older tradition. The earlier empiricists failed because they were not empirical enough; and through their failure empiricism became an acknowledgement of defeat. Towards the end of his career James made repeated

allusions to the metaphysics which he was about to write. He was not spared to accomplish his purpose with the technical rigour which he had intended. But in his final metaphysics, incomplete as he felt and acknowledged it to be, James saw the dawning realization of that hope which was the deepest and most persistent motive in his philosophizing. "Let empiricism," he said, "once become associated with religion, as hitherto, through some strange misunderstanding, it has been associated with irreligion, and I believe that a new era of religion as well as philosophy will be ready to begin."[21]

[21] *Pluralistic Universe*, p. 314.

THE PHILOSOPHY OF WILLIAM JAMES

John Dewey. "The Philosophy of William James." *Southern Review* 2.3 (Winter 1937): 447–461.

The Thought and Character of William James, by Ralph Barton Perry. Vol. 1, *Inheritance and Vocation*; Vol. 2, *Philosophy and Psychology*. Boston: Little, Brown, and Co., 1935.

The impression that I carry away from reading the record of the activities and connections of William James is that in respect to many-sidedness he is the most significant intellectual figure the United States has produced. There are those who surpass him in special points: Jefferson, for example, in depth and range of political thought, and Emerson in consistency and concentration of pure intellectual flame. But James seems all but unique in his variety of conjunctions with vital matters. As I reflect upon the full and ordered record which we owe to the thorough and intelligent art of Professor Perry.[1] I can think of but one aspect of human interest that is not expressed. There are no signs of concern with the spectacle of history. Yet this fact seems to be positive in import – an indication not of an insufficient but of an abundant sense of life, of life irrespective of chronology. One may say that he is intensely contemporary; *is* rather than *was*. For his contemporaneousness concerns not the incidents that make up the passing show but springs from the problems and predicaments in which mankind finds itself implicated under all skies at all times.

The story of William James is of enormous interest when it is viewed simply as an account of an extraordinarily gifted family. Dr. Perry has done well to devote one-fifth of the first volume to the father, Henry James, Sr. A commentator could profitably devote an entire review to this remarkable man and his equally remarkable ideas and associations. Putting heredity to one side, one can hardly form an adequate picture of the gift of William James for lucid and picturesque diction and of the unconstrained originality of his thinking, without some knowledge of the father and the way in which he ignored the intellectual conventionalities and respectabilities of his day. I

[1] The subtitle – "As revealed in unpublished correspondence and notes, together with his published writings" – is worth quoting in full.

should like to pause to dwell on the family environment in which the budding capacities of James were formed. The spontaneity of affection that held it permanently together is not only a complete refutation of the notion that genius is hard to live with but is a heartening picture of what domestic life is capable of being. The respect which each member of the family shows for the personality of every other member can hardly have failed to be an important factor in shaping the idea of the individual which, as we shall see, is fundamental in the philosophy of William James.

Throughout the volumes runs the current of the affection and admiration in which William James and his brother, the novelist, Henry James, Jr., held each other. And there are occasional glimpses of the other children, each of whom rose far above the commonplace and mediocre. The pages of William himself could be searched in vain to find criticism more penetrating, expressed in any more vivid way, than that of the sister Alice, directed toward William. "William expressed himself and his environment to perfection when he replied to my question about his house in Chocorua. 'Oh, it's the most delightful house you ever saw; it has fourteen doors, all opening outwards.' His brain isn't limited to fourteen, perhaps unfortunately." And when she said that he "could lend life and charm to a tread-mill," she stated precisely the feeling of everyone who enjoyed contact with the unconquerable vivacity of his interests; a persistent animation that was sustained throughout recurrent physical and mental ill-health. The novelist brother was constant in his affectionate admiration for his older brother, and while he had no interest in philosophy and professed incapacity for understanding it, he nevertheless put his finger upon the spirit of William's philosophizing when he wrote enthusiastically after the receipt of *Pragmatism* that its author had made philosophy more interesting and living than anyone had made it before, through creation of a philosophy that was "relevant and assimilable and referable."

The second part of Perry's work is entitled "Education and Career" and is a welcome substitute for what often passes as biography. For Perry permits the story to develop largely in terms of letters written by and to James, while he himself supplies just the quality and quantity of interpretive comment that is needed to make the story consecutive. Here too, as well as in family relations, there is a certain uniqueness of significance. William James had no schooling in the ordinary sense of that word. But he was exposed to an unusual variety of contacts, and most of them, unlike the themes of ordinary schooling, "took." His father had reacted strongly against the Calvinistic zeal of *his* father, expressed in desire to form his children in his own moral image. He wrote in an almost Rousseauan vein, "The great worth of one's childhood to his future manhood consists in its being a storehouse of innocent natural emotions and affections, based upon ignorance.... I am sure that the early development of my moral sense was in every way fatal to my natural innocence, the innocence essential to a free evolution of one's spiritual

character." In consequence, he withheld himself, to a degree extraordinary for his day and age, from the attempt to mould his children's beliefs and characters. At first sight this abstinence appears to conflict with the unusual depths of his personal convictions. In reality it is a tribute to the fidelity with which he lived up to his deepest conviction: the necessity of *free* evolution of spiritual character. The apparently haphazard nature of the education of the children and its actual issue in fruitful achievement cannot be understood apart from the loyalty of the father to his faith in human nature, when the latter is free from the distortions of convention and the paralysis of rigid institutionalism.

In an optimistic moment, he once wrote, "My sole hope for humanity is that men will go on more and more to such a complete obedience of their natural instincts that all our futile old rulers, civil and religious, will grow so bewildered as to abandon their thrones and leave the coast free to scientific men" – not that obedience to natural instinct was the desired goal but that it was a necessary condition of its attainment. The actual or practical result was finely summed up in the comment of the daughter Alice. "How grateful we ought to be that our excellent parents had threshed out all the ignoble superstitions, and did not feel it their duty to fill our minds with the dry husks – leaving them *tabulae rasae* to receive whatever stamp our individual experience was to give them, so that we had not the bore of wasting our energy in raking over and sweeping out the rubbish."

Not the least important factor in the education of William was his temporary and experimental adoption of the career of a painter. Apropos of the fact that he abandoned the career of artist in behalf of that of scientist and philosopher, while Henry fell by sheer force of temperament into that of literary artist, Mr. Perry makes one of the most discriminating of his many discriminating comments. Of Henry he says:

> Experience afforded patterns or *scenes*, having for him some mysterious affinity of order or rhythm by which they were apprehended feelingly as units, and by which they became possessions to be stored against the day of their literary use. William shared this passion, but though an insistent it was always a subordinate motive. His own proper and deeper passion was to look behind the scene for causes or to look beyond in behalf of governing purposes ... William had a painter's eye. He had a capacity, perhaps never equaled, of seizing and exposing the evanescent moments and fugitive sequences of conscious life.... But he never indulged this interest without a revulsion against it, a revulsion that took one or the other of two forms – either *action* or *explanation*.

Henry speaks of the "inveteracy of his [William's] interest in the 'queer' or the incalculable effect of things. There was apparently for him no possible

effect whatever that might not be more or less rejoiced in as such – all exclusive of its relation to other things than merely knowing." This aggressive catholicity of interest, with a bias, on the whole, in favor of the odd, involved an experimental attitude that was not congenial to the profession of painting, at least as that was pursued in the early sixties.

There seems to be no clear explanation of why he left painting save that it failed to hold him. His feeling that he could never be more than a mediocre painter appears to me to be but a translation of the fact that the art did not absorb him. Nor does there seem to have been, at the outset, a definite indication of a "call," as the religious people used to term it, to science. He had been interested from boyhood in experiments, chemical and electrical, and when the scales went down for art, the other pan went up for science. His upbringing as well as his temperament predisposed him to tentative search for a vocation rather than predestined him to a particular career. His movement from art to chemistry, from chemistry to medicine, on to physiology and to physiological psychology, and from that to psychology and to philosophy, and to philosophy of a progressively "metaphysical" cast, is the record of a mind and personality that was continuously striving to find itself. While external physical conditions, such as the weakness of his back that made prolonged laboratory work impossible, played a part in determining his choice, I can but think there is an intimate connection between his enduring search, through many turns and windings, for himself and his own potentialities, and that sense of an unfinished and still developing world that colors all his philosophizing.

However this may be, the path that took him through a variety of interests and pursuits assuredly enriched his store of knowledge, added cumulatively to his resources, and prevented that premature hardening which is perhaps the bane of most persons who follow philosophy professionally. Above all it extended his range of personal contacts and associations. It would take, I fancy, a page of print simply to list the names of persons with whom he had intellectual companionship and with whom he carried on a stimulating exchange. This wide acquaintance expressed his genius for friendship. A reader who should dip casually here and there into these large volumes might wonder whether at times letters of no great moment were not too extensively reproduced. But one who reads consecutively will, I am sure, come to the conclusion that nothing could well be spared. As with the painting of a portrait, the multiplication of strokes, many minute in themselves, build up a solid figure. A great debt of gratitude is due Mr. Perry for the skill and patience with which he has accomplished his task. The obligation extends far beyond the circle of professional psychologists and philosophers. The range of intellectual connections of William James was so wide and the fervor with which he went out to meet them so intense, that the volumes give an irreplaceable portrayal of a most significant aspect of the development of American culture in the last two-thirds of a century.

An account of William James as a philosopher cannot, then, be separated from the development of William James the man, as this development was influenced by his family relations, his informal but vital education, and his varied contacts with vocations and men. This fact is, indeed, the point which reading of these volumes has most impressed upon me. To my mind, William James constitutes a memorable turning point in the story of American philosophic thought precisely because the human man always took precedence of the professional philosopher. He says of himself, "I originally studied medicine in order to be a physiologist, but I drifted into psychology and philosophy from a sort of fatality. I never had any philosophical instruction. The first lecture on psychology I ever heard being the first I ever gave." It would be easy to exaggerate the element of "drift." A drift that occurs because of fatality is an impulsion from within, not a floating on an external current of chance. But the struggles of James within himself, the tardiness of his recognition as a genuine philosophic thinker, his final crucial influence in redirecting much of American philosophical thought, all of these things, in my opinion, have an intimate connection with the fact that he never underwent academic and professional philosophic instruction.

I do not mean, of course, that mere absence of such instruction is a warrant of philosophic independence and originality, or even a contributing factor. The contrary is the case. Self-taught philosophic "geniuses" usually exhibit lack of proportion and perspective, and exhibit swollen conceit of originality when they awkwardly reproduce some one or other of the most familiar of philosophic conceptions. James doubtless suffered at times from lack of the technique which is about all that formal philosophical instruction can confer. But his native gifts, his family environment, his range of contacts, combined with the instruction he obtained through his own studies, render in his case a defect of technique of slight import. His escape from the cramping influence of intellectual traditions, which in the hands of the average teacher are hardened into lifeless conventions, had something to do, in my opinion a great deal to do, with the intensity with which he laid hold of philosophical problems. As I have already intimated, they were for him first of all problems of urgent personal force and vitality; since they were not covered over by things learned at second hand, they retained the freshness and immediacy that are such striking factors of the thought of James, so striking as to make him all but unique among philosophers. To say these things does not imply lack of respect for technique. Original vision in order to endure and make its way must take on the resources afforded by competent technique. But there is always the danger that mastery of the tools of the intellectual trade will become a substitute for vision, while the inherent sincerity of an experience such as that of William James may be trusted in the end to generate its own relevant technique.

It is for this reason that I feel justified in including such remarks as I have made about the environment and career of William James under the general

caption of his *philosophy*. The philosophical writings of James have, to an unusual degree, their own luminosity. But the record of his correspondence and his otherwise unpublished notes take us behind the printed word; they bring us face to face with the generative experiences from which the written word is derived. I do not know of any other case in the whole available record of intellectual origins and development in which we are so fully taken behind the scenes and initiated into the vital personal experiences out of which formulated doctrines finally sprang. Interest in the initiation and the gratitude due Mr. Perry for making the record accessible are not confined to those especially occupied with philosophy. They are shared by all those interested in the history of American intellectual life and by all those who are concerned with the mysterious conditions that lie back of original creative productivity.

Before coming to what seems to be *the* problem that entered so deeply into the experience of James as to determine the structure of his philosophy (even accounting for certain features that taken by themselves seem eccentric), I want to quote some things that were said by James at various times about philosophy and the teaching of philosophy. James remarked, in a letter to Hobhouse, that every philosopher is motivated by some bogey in the background that he wants to destroy. The remark seems to me profoundly true; failure to realize what it is that a philosopher feels the pressure of and wants to get rid of is one of the main sources of the infertility of philosophical controversy. James goes on to add that *his* bogey is *dessication*. It is in this context that I would place remarks like the following, made about Wundt in the course of a letter to Stumpf.

> Surely, you must admit that since there must be professors in the world, Wundt is the most praiseworthy and never-too-much-to-be-respected type of the species ... a professor, a being whose duty is to know everything and to have his opinion about everything connected with his *Fach*. He says of each possible subject, "Here I must have an opinion. How many possible opinions are there? three? four? Yes, just four." Thus he acquires a complete assortment of opinions of his own and as his memory is good, he seldom forgets what they are.

I cannot but think that this passage throws, by contrast, a good deal of light upon the aims and procedure of James himself, including the things for which he has been most criticized – such as the inconsistencies of expression that are found because in dealing with one subject James forgets just what he has said upon some other occasion. His correspondent, the English thinker Shadworth Hodgson, expressed the characteristic quality of James with great moderation when he wrote that James "makes us see the reality of things, the real common-sense of the questions and problems at issue." When James Ward complained, in a review, complimentary on the whole, of James' lack

of systematic treatment of psychological topics, James replied admitting that he was too unsystematic, but added: "In this case I permitted myself to remain so *deliberately*, on account of the strong aversion with which I am filled for the humbugging pretense of exactitude in the way of definition of terms and descriptions of states that has prevailed in psychological literature." The conviction expressed in this remark is the reason why James at times seems to lean over backward in fear of system-making that is artificial, and it certainly helps explain his later overresponsive attitude to Bergson's attack on logic and conceptual constructions generally. The fact is, however, that much in James that was attacked by his early contemporaries as lack of sufficient respect for logical form is in reality an expression of his superior intellectual conscientiousness. He was keenly sensitive to the danger of forcing unity and system beyond what facts themselves indicated.

There is a reflection of his basic intellectual conscientiousness in the reasons that he gave, in accepting an instructorship in anatomy, for not taking up philosophy as a career – for he was quite aware even then that his chief interest was in philosophical or general problems. He draws back, he says, from adopting the career of a philosophic teacher, in spite of the fact that his deepest interest is in philosophic issues, because he is so constituted that he needs some stable reality upon which to lean, while "a professed philosopher pledges himself publicly never to have done with *doubt* on these [the fundamental] questions, but every day to be ready to criticize and call in question the grounds of his faith of the day before." There are, I suppose, many occupants of philosophic chairs who go through the form, as a matter of pedagogic technique, of such persistently renewed questioning. But it would be difficult, I think, to find cases where the sense of the obligation of the philosopher to be ready to carry out the doubts and questionings in good faith was so strong as to lead him so to doubt his own enduring strength to assume the responsibility that he was deterred from the career of the philosopher. It would be impossible, it seems to me, to find better evidence of the profound seriousness of James' sense of intellectual responsibility – a sense which his early critics, perhaps because of his occasional irrepressible levity of verbal expression, were loath to credit him with.

A few years later, while still teaching physiology, he uttered golden words as to what philosophy and its teaching should be. "Philosophic study means the habit of always seeing an alternative, of not taking the usual for granted, of making conventionalities fluid again, of imagining foreign states of mind.... What doctrines students take from their teachers are of little consequence provided they catch from them the living philosophic attitude of mind, the independent, personal look at the data of life and the eagerness to harmonize them." Although James is conventionally supposed to be opposed to unity and system on principle, he expressed one of the leading motifs of his life when he said that one can never be a great philosopher who lacks "that personal,

unitary, all-fusing point of view which the great ones have." What he objected to was the unitary point of view that is merely dialectical, not personal, and in which parts are externally held together by mechanical logic rather than fused in and by emotional and volitional conviction. Later when he had arrived at relative philosophic maturity he said of Royce's *World and Individual*, "The subject is not really vital to him, it is just fancy-work." When one recalls his genuine admiration for Royce's gifts in comparison with those of most other teachers of philosophy, one gets a glimpse of the gulf that separated his idea of what constitutes genuine philosophy from the academic practice frequently followed.

The justification for quoting at length these incidental comments is that they convey by contrast the vitally personal source of James' own philosophizing. I do not know any other modern thinker whose philosophy owes so little to dialectics and to tradition, to the second hand generally, and so much to predicaments that were vitally experienced; that in the large and proper sense of the word were moral in quality. In him the need for working out a viable philosophy was one with the need for finding a solution of matters that weighed heavily upon him as a living being. Mr. Perry justly emphasizes the importance attached by James to the motives from which philosophizing proceeds. I hope I do not do him injustice in saying that he would recommend James' essay on "The Sentiment of Rationality" in the form in which it included the essay on "Rationality, Activity and Faith" (together with James' own notes now made available) as the natural introduction to James' own philosophy. The needs to be satisfied are, on the theoretical side, clearness and unity. Their demands are so different as to tax thought to the uttermost. For clearness moves in the direction of diversity, the Many, while the simplicity that results from one-sided emphasis upon the One, is often specious. The incapacity of monistic systems to resist analysis from the standpoint of either fact or logic is one of James' favorite themes. But even when the conjoint need for unity and clarity is satisfied, we are only at the threshold of an adequate philosophical system. The practical needs of man, emotional and volitional, must also be satisfied. It is the depth with which James felt the urgency of the latter need that marked him off from most of his contemporaries, and that, as I have already suggested, explains both the early uncomprehending and often scornful rejection he experienced and the power of inspiration exhibited later by his thought.

There exists a letter written by James as early as 1869, the year in which he received his M.D., the time at which, probably, the influence of natural science was at its height with him, in which one finds the clue to the problem that was central in the formation of his own philosophy. After saying that there was once a period in which the ideas of nature and of human fate were conglomerated in one, he says that in their later development "the nature-lore and the individual-fate-lore or religion have become so differentiated as to be antagonistic."

The remark might be interpreted in the sense of the conventionally recognized conflict of science and religion, since nature-lore is so evidently a name for science. But such an interpretation misses the point. The identification of religion with "individual-fate-lore" and the feeling that the effect of science is to submerge, to deny, the importance of individuality and of what happens in and to the individual as such is the significant matter. It is significant both negatively and positively. The early environment and rearing of James had made it impossible for him to conceive of religion in the terms of any historic religion, even that of Christianity in its purest and most sublimated form. There is hardly a word in all of his numerous writings about religion, about either any special doctrine of Christianity or the figure of its reputed founder. Such allusions as he makes to churchly creeds and practices are, for him, unusually unsympathetic in tone. They are in the vein of the following:

> My training in natural science has completely disqualified me for sympathetic treatment of the ecclesiastic universe. It is impossible to believe that the same God who established nature should also feel a special pride at being more immediately represented by clergymen than by laymen, or find a sweet sound in church-phraseology and intonation, or a sweet savor in the distinction between deacons, archdeacons and bishops. He is not of that prim temper.

It is sometimes said that the essence of Protestant Christianity is the assertion of the immediate relation of God and the individual soul. With this conception as a basis, it may be said that James carried the spirit of Protestantism to a point where any connection with Christianity became meaningless. The "individual-fate-lore" in which he was interested was universal. All individuals looked alike to him as far as individuality is concerned in its relation to the universe. Hence the special treatment of religion that appears, say, in his *Varieties of Religious Experience* is but a part of his general philosophy and cannot be justly appreciated apart from the latter. On the face of the pages of that book, he selected cases so extreme that he himself called them pathological. But his selection was based on the belief that certain generic features in the relation of the individual as such to the universe were thrown into high relief in these cases, and could accordingly best be studied through them. The root idea is that in the religious experience, the essential individual – call it his soul – stands in communication with the universe at a level more primitive and at the same time more fundamental, in a certain way more veridical, than is attainable at the level of conscious and rational observation and thought. The result is "a kind of experience in which intellect, will and feeling, all our consciousness and all our subconsciousness together melt in a kind of chemical union." Hence every genuinely religious experience is that which for lack of a better name we call mystical. In this experience, the "less articulate but more

profound parts of our nature hold out against the attempt of a more superficial and loquacious part to suppress it." James was quite aware that this notion of the essentially irrational and instinctive origin of religious experiences was capable of being used as an argument against the validity and utility of religion. He himself deliberately chose to give the idea another and favorable interpretation. This choice roots partly in a temperamental feeling of the importance of vital instincts, on the ground that they represent the *process of life* more effectively than can rational thought, and partly springs from his philosophical doctrine that in any case immediate experience is more fundamental than are the ideational constructions built upon it. The underlying conception, I should say, is that the individual after all must have some vital connection with the universe in which he lives and that this connection can ultimately be but of two kinds. It is either such as to depress the individual or such as to support and invigorate him. Morally, we are entitled to adopt the latter attitude for the purpose of action even though rational proof of its validity be lacking. Short of the existence of overwhelming evidence of the invalidity of the belief, we may choose to live, to act, heroically, upon the assumption that something in the universe feeds our ideal aspirations and is actively on the side of their realization.

I have, then, dwelt at length upon the concern of James with religion and his understanding of its nature just because the latter is so different from what is usually called religion. The nub of the whole matter is the problem of the genuine relation of the individual and the universe, and this is the question which is final for philosophy itself. The growing opposition of James to monism in every form, idealistic as well as materialistic; his struggle against absolutisms of every sort, metaphysical, ethical, political; his pluralism; his indeterminism – all the determining *motifs* of his philosophy spring from his extraordinarily intense and personal feeling for the worth of the individual, combined, however, with an equally intense realization of the extent to which the findings of natural science (to which he was loyally devoted) seemed hostile to rational justification of the idea that individuality as such has any especial value of justification in the universal scheme of things. His long preoccupation with the philosophy of his colleague, Royce, vividly portrayed in the volumes before us, is a record of his dissatisfaction with the effort to give value to the individual on the basis of monistic idealism. As he once wrote, "Make the world a unit, and worship and abhorrence are equally one-sided and equally legitimate reactions." Treat the world as a plurality, and the difference between good and bad has a meaning, and because of this difference, choice, loyalty, adoration, have also a meaning. But James was equally unconvinced by the attempts of his chief fellow pluralists, Davidson and Howison, to find a strictly *rational* support for the doctrine of the primacy and ultimacy of individuals as such. Their views seemed to him to be, on one side, abstractly dialectical, and, on the other side, to be based on

lack either of adequate empirical and scientific knowledge or else of adequate respect for such knowledge (probably on both). A certain act of faith in the sense in which faith means the resolve to live as if a certain doctrine were true until evidence appears to the contrary, was to him the way out. Meantime, the act of faith has a *certain* amount of rational support in our instinctive emotional life and in the deliverances of immediate experience as a mode of acquaintance-knowledge.

The biographic roots of this basic philosophic attitude of James seem to be found, rather especially, in the crisis of his own life, that was undergone in connection with extreme depression due to ill-health, in 1870. He found the only promise of a way out in the assumption of a certain attitude of resolute action. The philosophical implications involved in this attitude are strangely prophetic of the most fundamental ideas of his later philosophy. He asked, in his diary, "Can one with full knowledge and sincerely ever bring himself so to sympathize with the *total process of the universe* as heartily to assent to the evils that seem inherent in its details? … If so optimism is possible." But the distinctive interests and sympathies of the individual may seem so important to him that they refuse to be swallowed up in the "feeling for the total process." In this case, the resulting attitude must be such hostility to the structure of the universe that pessimism is the only outcome. However, between the two extremes there is an alternative. "If a *divided* universe be a conception possible for his intellect to rest in, and at the same time he have vigor of will enough to look the universal death in the face, without blinking, he can lead the life of moralism." The conception of the intrinsic connection between a "divided" (pluralistic) universe and the attitude of resolute choice and action that is implicit in this passage, was reinforced as James came to see that certain volitional and emotional attitudes are the vital, although unexpressed, premises underlying both the optimistic monisms and the pessimistic dualisms that set the self and its interests in stark opposition to the cosmos as a whole.

The intensity of feeling that marks what James wrote in his diary and to his intimate friends in the time of crisis subsided as the years passed. But unless I have completely misunderstood the course of his development, as that is so skillfully and fully portrayed in the volumes before us, the sense of the problem involved remained basically the fountain-head of all his philosophy. It is at the root of his feeling of the conflict between science as nature-lore and religion as individual-fate-lore. It is the source not only of his pluralism and his indeterminism, but of his more special doctrines of the right to adopt in action a sincere belief in the absence of objective evidence and of that part of his pragmatism that emphasized that consequences, rather than origins, are the ultimate test and criterion of meaning and validity.

The sixth and final part of the present volumes is entitled "The Ultimate Philosophical System." Students of the metaphysical doctrine of James,

especially as regards the meaning of *Pure Experience*, will find much to assist them in these pages. If I forego further reference to them, it is not only because of limitations of space, but because I believe that the earlier exposition of the vital temperament and vital experiences of James is fundamental for the understanding of his more technical doctrines. The connection between the two becomes increasingly tenuous and indirect. But it is never lost. The sincerity and depth of the personal experiences which gave to James the key to the genuine meaning of philosophical issues remained the groundwork of his teaching. They are to my mind the enduring source of what we still have to learn from even the more technical aspects of his thought. In his attempts at developed formulation he was subject to the limitations from which every independent thinker suffers. The more original the thought, the more it is betrayed by the fact that the only language in which original insight can be expressed is that formed by the very doctrines against which one is reacting. Hence it is doubly important that the students of the philosophy of James never lose hold upon its vital springs and source.

THE VANISHING SUBJECT IN THE PSYCHOLOGY OF WILLIAM JAMES

John Dewey, "The Vanishing Subject in the Psychology of James." *Journal of Philosophy* 37.22 (24 October 1940): 589–599.

There is a double strain in the *Principles of Psychology* by William James. One strain is official acceptance of epistemological dualism. According to this view, the science of psychology centres about a *subject* which is "mental" just as physics centres about an *object* which is material. But James's analysis of special topics tends, on the contrary, to reduction of the subject to a vanishing point, save as "subject" is identified with the organism, the latter, moreover, having no existence save in interaction with environing conditions. According to the latter strain, subject and object do not stand for separate orders or kinds of existence but at most for certain distinctions made for a definite purpose *within* experience.

The first view is explicitly set forth by James in the following words:

> *The psychologist's attitude toward cognition* will be so important in the sequel that we must not leave it till it is made perfectly clear. *It is a thoroughgoing dualism*. It supposes two elements, mind knowing and thing known, and treats them as irreducible.... They just stand face to face in a common world, and one simply knows, or is known unto, its counterpart. This singular relation is not to be expressed in any lower terms, or translated into any more intelligible name.... Even in mere sense-impression the duplication of the object by an inner construction must take place.... The dualism of Object and Subject and their pre-established harmony are what the psychologist as such must assume, whatever ulterior monistic philosophy he may, as an individual who has the right also to be a metaphysician, have in reserve.[1]

The *Psychology* was published in 1890. Much of the book was written some years before. The material of the important chapter on the "Stream of

[1] *The Principles of Psychology*, Vol. I, pp. 218–220, passim. Italics in original text. Referred to hereafter as *Psychology*.

Consciousness," which verbally is probably the most subjectivistic part of the whole book, was published in *Mind* in 1884.[2] In 1904 in his article "Does 'Consciousness' Exist?" he says of the "consciousness," which the passage quoted takes as the basis and source of the material of his *Psychology*, that it is "mere echo, the faint rumor left behind by the disappearing 'soul' upon the air of philosophy." And what is especially significant for the present theme, the tendency of the separate subject as knower to disappear even in the *Psychology*, he adds "for twenty years past I have mistrusted 'consciousness' as an entity; for seven or eight years past I have suggested its non-existence to my students."[3] "Twenty years" takes his distrust well back of the date at which his *Psychology* appeared. A moderate amount of psychoanalysis might lead one to infer that the explicitness with which he states that the assumption of dualism is necessary for the psychologist means that he entertained doubt about the *ultimate* soundness of the dualistic position.

That he did not go further than he did go in his *Psychology* is not surprising in view of the state of the subject at the time he wrote. In view especially of the fact that he attacked both of the only two trends which then existed in psychology, namely, associationalist and "rational" psychology, one can understand why he hesitated to carry his scepticism to an even more radical extreme. For the only alternative to these two views that existed at that time was a dogmatic materialism with its "automaton" theory of psychological phenomena. In spite of the tenderness of James on the topic of the *soul* he wrote that there was no scientific need whatever for a substantial soul or permanent mind; he went so far as to give a strictly empirical account of personal identity.[4]

His reduction of the "subject" to a "passing Thought" is itself sufficient proof of the way he whittled down the knowing subject. And it is worth special note that in one passage, written in direct connection with his discussion of the Self, he goes so far as to express a doubt about the existence

[2] I say "verbally" because it is quite possible to translate "stream of consciousness" into "course of experience" and retain the substance of the chapter.

[3] Essay reprinted in *Essays in Radical Empiricism*, p. 2 and p. 3.

[4] For his tenderness see the *Principles of Psychology*, Vol. I, p. 181, where he says "The fact is that one cannot afford to despise any of these great traditional objects of belief." As to the substantial soul and permanent mind, see Vol. I, p. 346, where he says "As *psychologists*, we need not be metaphysical at all. The phenomena are enough, the passing Thought itself is the only *verifiable* thinker, and its empirical connection with the brain-process is the ultimate known law." As to personal identity, as evidence for a permanent substantial subject or self, he was influenced by the recently discovered facts of split personality and wrote (Vol. I, p. 350), "The definitively closed nature of our personal consciousness is probably an average statistical resultant of many conditions, but not an elementary force or fact."

of even a separate "thought" or mental state of any kind as the knower, saying that it might be held that "the existence of this thinker would be given to us rather as logical postulate than as that direct inner perception of spiritual activity which we naturally believe ourselves to have."[5] However, he dismisses this conclusion, although it is a direct result of his actual analysis, as "speculative" and says that speculations "contradict the fundamental assumption of *every* philosophic school. Spiritualists, transcendentalists, and empiricists alike admit in us a continual direct perception of the thinking activity in the concrete. However they may otherwise disagree, they vie with each other in the cordiality of their recognition of our *thoughts* as the one sort of existence which skepticism cannot touch" (pp. 304-305). But he adds in a footnote a remark that is especially significant in view of the article of 1904 to which reference has been made. For he says that there is one exception to the statement about all philosophical schools, namely, the important article of M. Souriau, the conclusion of which is "que la conscience n'existe pas." That James's own denial of the existence of consciousness involves a complete repudiation of the dualism earlier officially professed is obvious from the following words of his later essay in which he says what is denied is an "aboriginal stuff or quality of being, contrasted with that out of which material objects are made, out of which our thoughts of them are made."

Before taking up in detail the whittling down of the mental or psychical subject as it occurs in the *Psychology*, I shall say something about the position which, if it had been developed positively and in detail, would have rendered unnecessary from the start any reference even to the "passing thought" as that which remains from the old substantial subject. This position is suggested in the passage already quoted in which James refers to the brain process as "the ultimate known law." James came to the study of psychology from a grounding in physiology in connection with a preparatory medical education. His naturalistic strain, as far as constructively stated, and its conflict with the professed epistemological dualism, was derived from this source. If it had been consistently developed it would have resulted in a biological behavioristic account of psychological phenomena. In his first expression of opposition to both the "rational" and the "associational" psychologies, he says that certain deficiencies in both of them proceed from their inability to take into account obvious physiological facts which demand recognition of the organism and the nervous system. He goes on to say that the Spencerian formula according to which biological and psychological phenomena are one in essence, both being adjustments of "inner" to "outer" relations, while very vague, is immensely more fertile than the old-fashioned rational psychology "because it takes into account the fact that minds inhabit environments which act on

[5] *Principles of Psychology*, Vol. I, p. 304.

them and on which they in turn react."[6] On this side, James's fundamental doctrine is that psychological phenomena (called by him the *mental life*) are intermediate between impressions received from the environment and the responsive adjustments the organism makes to the environment. If what is involved in this view had been consistently maintained, the dualism that existed in Spencer's two sets of "inner" and "outer" relations would have been overcome, and organisms or personal beings, not "minds," would have been said to "inhabit the environment." The behavioral position is maintained when James says that "pursuance of future ends and choice of means for their attainment are the mark and criterion of presence of mentality in a phenomenon," since the passage suggests that the whole meaning of *mentality* consists in objectively observable facts of the kind mentioned. But as the matter is finally left it may be doubted whether James intended to go further than to say that this pursuance and choice is the external sign of something called "mental" operating behind. For he limits the scope of the statement by saying that the view just stated would be adopted as the mark and criterion by which to circumscribe the subject-matter of this work *as far as action enters in*.[7] The clause I have italicized indicates that he held to the existence of phenomena so "mental" in nature that action (behavior) does not enter into them. At the same time, the position of James is free from that defect of the latter "behaviorism" which locates behavior, and hence psychological phenomena, *inside* the organism. For he says that the function of the nervous system "is to bring each part into harmonious co-operation with every other" part so as to make possible acts which are of service in connection with the sensory impressions proceeding from the environment.[8]

Since the biological approach does not control subsequent analyses to the extent that the introductory chapters would by themselves have led one to expect, it is worth while to note instances in which it is definitely influential. The chief cases are the treatment of habit and the effect of practice. The former, treated as a biological factor having its basis in the constitution of matter, is said to be the "cause" of "association of ideas," and hence of retention and recollection, and also of imagination.[9] Even more significant in its implications (which, however, are not developed) is his statement that "attention and effort ... seem in some degree subject to the law of habit, which is a material law."[10] The operation of practice, understood in terms of motor

[6] *Principles of Psychology*, Vol. I, p. 6.

[7] *Principles of Psychology*, Vol. I, pp. 8 and 11.

[8] *Ibid*., p. 12.

[9] *Ibid*., pp. 566 and 653, and Vol. II, p. 44.

[10] Vol. I, p. 126.

activities, is made central in discrimination. "Where ... a distinction has no practical interest, where we gain nothing by analyzing a feature from out of the compound total of which it forms a part, we contract a habit of leaving it unnoticed."[11] He makes a great deal of Helmholtz's view that we notice "sensations" not *per se* but as "far as they enable us to judge rightly of the world about us; and our practice in discriminating between them usually goes only just far enough to meet this end" (p. 517). The ambiguity, noted later, between "sensation" as a strictly physiological process in the afferent structures and as a perceived quality of an object, influences James's treatment, since he seems to assume that the "sensation" is there all the time but I sometimes noted and sometimes not—a position all the more surprising because of his elaborate criticism of the doctrine of "unconscious mental states." He uses such expressions as the following: "Helmholtz's law is that we leave all impressions unnoticed which are valueless to us as signs by which to *discriminate things*. At most such impressions fuse with their consorts into an aggregate effect." Only the influence of an inveterate dualism could lead James to call sensory processes "impressions."

The later pragmatism of James is implicit in what he says about reflective thinking or reasoning. "My thinking is first and last and always for the sake of doing, and I can only do one thing at a time." There are no "truer ways of conceiving [understanding or interpreting]" things than any others; there are "only more important ways; more frequently serviceable ways."[12] Finally, in contrast with the current theory of perception, James gives an account which is definitely biological and behavioral.

> We certainly ought not to say what usually is said by psychologists, and treat the perception as a sum of distinct psychic entities, the present sensation namely, *plus* a lot of images from the past, all "integrated" together in a way impossible to describe.

The simple and natural description is

> that the process aroused in the sense-organ has shot into various paths which habit has already organized in the hemispheres, and that instead

[11] *Ibid*., pp. 515–516.

[12] Vol. II, pp. 333–336. On page 335 we read the following: "The essence of a thing is that one of its properties which is so *important for my interests* that in comparison with it I may neglect the rest." The important role of "interest" in the entire scheme of James's account of psychological phenomena is a well-known fact. Officially he assumes interest to be mentalistic. What he actually says about it is most readily understood in terms of the selections effected by motor factors in behavior.

> of our having the sort of consciousness [perception] which would be correlated with the simple sensorial process, we have that which is correlated with this more complex process.[13]

When we ask why James did not develop his treatment in the direction indicated by these considerations, we come back to the influence exercised by the surviving metaphysical dualism. For as long as this dualism is postulated, the connection the nervous system, including the brain, indubitably has with psychological phenomena is a "mystery," and the more detailed and complete the evidence for the connection the more the mystery deepens. The influence of the dualism is so strong that James does not follow out the implication of his hypothesis that the brain—and nervous system generally—functions as an organ in the behavior constituted by interaction of organism and environment. Consequently, instead of applying the idea to the description of each one of the diversity of observed psychological occurrences, showing how it links up in detail with the general doctrine of the function of the nervous system as an instrumentality of effective interaction of organism and environment, he goes so far as to express adherence to the most miraculous of all the theories about the "mystery," namely, the parallelism or pre-established harmony of physical and psychical.

There is indeed a problem. But it can be broken down into a large number of things to be investigated. It is not a wholesale metaphysical problem, but a special problem like that of any scientific inquiry: namely, the problem of discovering the conditions of the occurrence of an observed phenomenon. Certain experienced situations occur, some of them mainly emotive or affectional in quality; others that of knowledge of this or that thing. The question of how these experienced situations come into existence is important because knowledge of conditions is always a prerequisite of control. Knowledge of organic conditions is part of the knowledge required if having of desired experiences and not having of unwanted experiences is to come under our control, knowledge of environing conditions being, of course, the other part. Knowledge of processes in the nervous system and brain is an important, although far from exclusive, part of the required knowledge of organic conditions. But in principle there is no difference between discovering the cerebral conditions involved in a hallucinatory or a veridical perception and the chemical conditions involved in occurrence of water. The difference is one of greater complexity. But our comparative ignorance of concrete conditions in the case of situations, as matters of experience, does not make a "mystery" out of them.

[13] *Ibid.*, Vol. II, pp. 80 and 79; cf. pp. 103–104.

I now come to discussion of some psychological matters where James admits that the duplication in an "inner construction" of what is experienced is no part of the fact which is observed, but is a later theoretical interpretation. In the passage about dualism, quoted at the outset, James says that this duplication is demanded even in the case of "mere sense impression." In his chapter on sensation James says:

> *A pure sensation is an abstraction*; and when we adults talk of our "sensations" we mean one of two things: either *certain objects*, namely, simple *qualities or attributes*, like *hard, hot, pain*; or else those of our thoughts in which acquaintance with these objects is least combined with knowledge about the relations of them to other things.[14]

The latter part of this sentence retains the reference to the inner "thought" as that which knows its outer counterpart. But James's sense for empirical fact caused him to recognize that in the actual experience of qualities as objects no reduplication in inner sensations is to be found. For immediately afterward he says:

> *The first sensation which an infant gets is for him* the Universe.... The infant encounters an object in which (though it be given in a pure sensation) all the "categories of the understanding" are contained.... Here the young knower [the infant, not a mental state] meets and greets his world. (P. 8.)

This position about sensory qualities is the one in line with the objective stand he takes whenever guided by evidence into the particular issue with which he is dealing.[15] The following passages are representative:

> Take the example of an altogether unprecedented experience, such as a new taste in the throat. Is it a subjective quality of feeling, or an objective quality felt? You do not even ask the question at this point. It is simply *that taste*. But if a doctor hears you describe it, and says: "Ha! now you know what *heartburn* is," then it becomes a quality already existent *extra mentem tuam* which you in turn have come upon and learned. The first spaces, times, things, qualities, experienced by the child probably appear,

[14] *Principles of Psychology*, Vol. II, p. 3.

[15] There is nothing intrinsically *sensory* about *red*, *hot*, *pain*. They are so named because experience has shown the importance of the organic apparatus by which they are mediated. That color is visual and sound auditory is an item of knowledge gained through study of the conditions of the *occurrence* of the quality; it is no part of the quality.

> like the first heartburn, in this absolute way, as simple *beings*, neither in nor out of thought.[16]

This view is probably the germ of his later theory of "neutral entities." The direct empirical meaning of *neutral* in this connection would seem to be that of indifference to the distinction between subjective and objective, this distinction arising when the proper guidance of behavior requires that we be able to tell whether a given sound or color is a sign of an environing object or of some process within the organism. Unfortunately his later writings seem at times to give the impression that these entities are a kind of stuff out of which both the subjective and objective are made—instead of the distinction being a question of the kind of object to which a quality is *referred*. If the latter position is taken then one of the problems of the psychologist is to determine the conditions under which a given *reference* occurs, the question of proper reference being the same *kind* of question that comes up when we inquire whether a given sound is produced by gunshot or by backfiring of an automobile.

Again, James says that "experience, from the very first, presents us with concreted objects, vaguely continuous with the rest of the world which envelops them in space and time, and potentially divisible into inward elements and parts." This passage is meant to apply to primitive as well as to highly elaborated experience of objects. For in the same context he speaks of "sensible totals ... subdivided by discriminative attention."[17] In another place he writes "No one ever had a simple sensation by itself. Consciousness [experience], from our natal day, is a teeming multiplicity of objects and relations and what we call simple sensations [qualities] are results of discriminative attention, pushed often to a very high degree."[18] Surely such passages as these indicate what is intended when it is said that the child's first sensation (experience) is for him the Universe, and that the "Universe which he later comes to know is nothing but an amplification and an implication of that first simple germ."[19] To hold that there is at the same time inner reduplication in thought or feeling is a case of what James elsewhere calls the psychologist's fallacy, reading into the original experience an inferential conclusion which the psychologist arrives at in his special investigations—in this case a wrong inferential result.

I now come to the central case in which the issue is clinched—the account given by James of the nature of the self and our consciousness of it, in which

[16] Vol. I, p. 272.

[17] Vol. I, p. 487.

[18] Vol. I, p. 224.

[19] Vol. II, p. 8.

the "subject" of dualistic epistemology disappears and its place is taken by an empirical and behavioral self. In speaking of the nature of "self-love" or egoism, he wrote:

> *The words* ME, *then, and* SELF, *so far as they arouse feeling and connote emotional worth, are* OBJECTIVE designations, meaning ALL THE THINGS *which have the power to produce in a stream of consciousness excitement of a certain peculiar sort*.[20]
>
> This position is developed in detail in connection with the bodily or material and the social selves which he has mentioned earlier. The general or theoretical position is that
>
> To have a self that I can *care for*, nature must first present me with some *object* interesting enough to make me instinctively wish to appropriate it for its *own* sake.
>
> What happens to them [our bodies] excites in us emotions and tendencies to action more energetic and habitual than any which are excited by other portions of the "field."
>
> My *social* self-love, my interest in the images other men have framed of me, is also an interest in a set of objects external to my thought.[21]

James, however, had postulated what he calls a "spiritual" self in addition to material and social selves. It might then well seem as if this psychical self, consisting of acts of choosing, consenting, refusing, and emotions like fearing, hoping, etc., remained *the* inner self, as an inexpugnable object of direct observation. But in fact it is in dealing with this aspect of the self that James puts forth his most explicit and detailed biological interpretation. For he says all that he can directly and empirically observe shows that this "'Self of selves,'

[20] *Ibid*., Vol. I, p. 319. The dualism is verbally retained in the mention of the "stream of consciousness." But aside from the fact that no difference is made in the argument when we substitute the words "the ongoing course of experienced things," the self or person is here expressly defined in objective terms, the small capitals being in the original text.

[21] Vol. I, pp. 319–321. Cf. the following: "The fact remains ... that certain special sorts of thing tend primordially to possess this interest, and form the *natural* me. But all these things are *objects*" (p. 325). The discussion of the special topic of egoism is an amplification of the earlier statement that a man's self is "*the sum total of all that he* CAN *call his*," all the objects he appropriates through the medium of a positive interest (Vol. I, p. 291).

when carefully examined, is found to consist mainly of the collection of these peculiar motions in the head or between the head and the throat."[22] In the context "these peculiar motions" are said to be "a fluctuating play of pressures, convergences, divergences, and accommodations in my eyeballs," and "the opening and closing of the glottis," with "contractions in the jaw-muscles" and the chest. These bodily movements, which are all that is directly experienced as the innermost centre, the "sanctuary within the citadel" of the self, are expressions of "a constant play of furtherances and hindrances, of checks and releases, of tendencies that run with desire and that run the other way." The theoretical interpretation is expressly stated in the following words:

> The nuclear part of the Self ... would be a collection of activities physiologically in no essential way different from the overt acts themselves. If we divide all possible physiological acts into *adjustments* and *executions*, the nuclear self would be the adjustments collectively considered; and the less intimate, more shifting self, so far as it was active, would be the executions. (Ibid., p. 302.)

He then says, since the adjustment activities are "entirely unimportant and uninteresting except through their uses in furthering or inhibiting the presence of various things, and actions," it is not surprising they are commonly overlooked. But the fact that adjustment activities are involved in all interactions with environing conditions, save in the acts that are most routine and "automatic," confers upon them a certain special position, for "they are the permanent core of turnings-towards and turningsfrom, of yieldings and arrests, which naturally seem central and interior."[23]

What is further said about personal identity is consistent with this behavioral interpretation. The appropriations of the passing thought are "less to *itself* than to the most intimately felt *part of its present Object, the body, and the central adjustments*, which accompany the act of thinking, in the head."[24] Furthermore, the belief in the sameness of the self arises on empirical grounds in the same way as belief in the sameness of any object whatever, "*the sense of our own personal identity*" being "*exactly like any one of our other perceptions of sameness among phenomena*."[25] Nevertheless the dualism reappears, for he still assumes that a "passing thought" must be there as the

[22] Vol. I, p. 301.

[23] Vol. I, p. 302.

[24] Vol. I, p. 341.

[25] Vol. I, p. 334.

knowing subject. Hence, after recurring to his doctrine that "'perishing' pulses of thought" are what know, he makes what on the face of it looks like an extraordinary compromise between the "pulse of thought" as *I* and the "empirical person" as *Me*.[26]

Were it important to do so, more evidence could be cited for the proposition that there are two incompatible strains in the Jamesian psychology, and that the conflict between them is most marked in the case of the self. But there is also evidence that on the side of the empirical strain there are the elements needed for a behavioral theory of the self. What he finally said in 1904, after he had thrown over his knowing Thought or Consciousness as a mere echo of a departed soul, was, after all, but an expression of ideas put forth in his *Psychology*, freed from hesitation and ambiguity. There is "the elementary activity involved in the mere *that* of experience,... and the farther specification of this *something* into two *whats*, an activity felt as 'ours' and an activity ascribed to objects." The former, he goes on to say, is

> part ... of the world experienced. The world experienced ... comes at all times with our body as its centre, centre of vision, centre of action, centre of interest.... The body is the storm centre, the origin of co-ordinates, the constant place of stress in all that experience-train.... The word "I," then, is primarily a noun of position, just like "this" and "here."[27]

But, as I have already intimated, he never reworked his *Psychology* so that all phases and aspects of psychological phenomena were observed and reported from this point of view. In consequence psychological theory is still the bulwark for all doctrines that assume independent and separate "mind" and "world" set over against each other. The idea originally came into psychology from philosophy. But now it is advanced by philosophers as having the warrant of psychology and hence possessed of the authority of one of the positive sciences. Philosophy will not be emancipated to perform its own task and function until psychology is purged, as a whole and in all its special topics, of the last remnant of the traditional dualism. And the purge requires more than a statement nominally made in terms of the living organism but in fact simply carrying over to the body distinctions that originated when there was a current belief in mind (or in consciousness) as a distinctive entity. This importation occurs whenever the phenomena are described in terms of the organism exclusively instead of as aspects and functions of the interactivity of organism and environment.

[26] Vol. I, p. 371.

[27] *Essays in Radical Empiricism*, pp. 169–170n.

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THE CAMBRIDGE SCHOOL OF PRAGMATISM

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INTRODUCTION

Our Faith in the Work of History

The term "pragmatism" encompasses a lot more territory than is often appreciated today in scholarly circles. There is both an advantage and a danger in allowing the term to coalesce, as it has, around the meanings given to it by the thinkers whose ideas have stood the test of time, in this case, we speak of Charles S. Peirce, William James, and John Dewey.

> The advantage derives from our confidence that history sorts out for us the voices and ideas that are most worthy of our continued consideration. This confidence is often well placed. Those views do survive, most often, whose defenders have been the ablest, and in the case of "pragmatism," I do not dispute the judgment of history. Peirce, James and Dewey represent three very different conceptions of philosophical pragmatism, all defensible today, all still very much a part of the on-going development of philosophical thinking, and all showing different excellences towards which pragmatic thinking can tend. Each of these conceptions of pragmatism continues to enrich us, and the interplay among these views remains a source of new variations in our thinking.

The disadvantage comes in a small way from the possibility that genuinely valuable directions and meanings will come to be forgotten when history's judgment is imperfect, due to any of a thousand types of historical accident of timing, trend, tides of popularity, and the like. But the greater source of disadvantage comes from our tendency towards an occluded view of the major trends in which we fail to understand fully the push and pull against which those ideas were formed. So, for example, we may and often do fail to understand fully Dewey's or James's own sense of "pragmatism" when we remain ignorant of the dialogue against which and within which those senses were formed. Thus, to give a common example, the interpreters and defenders of James who have not closely studied Josiah Royce (1855–1916) remain ignorant of something they desperately need to understand. They will not grasp what motivates much of what James says about pragmatism, why he makes the moves he makes, unless they see the extent to which Royce's criticisms are pressing James's thinking, placing before him alternatives, and forcing him in some cases either to choose or to shift ground.

In the case of Royce, this problem is also especially acute among those who study Peirce. Royce was a figure very much at the center of the development of pragmatism, and who certainly regarded himself as a pragmatist. Long before this tendency in philosophy had the name "pragmatism," Royce was among the small handful of eminent philosophers working to develop it. For Royce, as for some of the others of that generation, such as Borden Parker Bowne, the arrival of the label "pragmatism" was not an event of any remarkable moment. Insofar as the label designated something worth considering, a practical turn in philosophy, a recognition of the role of practical consequences in the further conduct of philosophical thinking, it was something they had embraced many years before. The label itself was rather more like the advent of a new problem in philosophical nomenclature than the sudden birth of a new trend in thinking (the subtitle of James's 1907 *Pragmatism* indicates as much: "A New Name for Some Old Ways of Thinking"). And the problem with nomenclature became a serious distraction from the genuine issues at stake. The popularity of the label itself presented a temptation among philosophers to climb aboard the bandwagon without waiting to sort out the precise role of this tendency in philosophical thinking. In this case, the bandwagon itself certainly belonged to William James, and Peirce rather quickly decided he did not want to ride. Dewey stayed aboard a while longer, and when James died, Dewey seems to have taken the reins. In the first and second decades of the twentieth century, so much was written about pragmatism, both pro and con, that it became impossible to tell who was on whose wagon, and how many wagons there were, and who was driving any of them. A. O. Lovejoy's summary indictment of the movement in his "Thirteen Pragmatisms" nicely depicts the confusion.

In the chaos, two of the important voices that were lost to subsequent scholars were those of Royce and his student John Elof Boodin. Our understanding of pragmatism has been grievously diminished by this loss. It is well that the present volume may go some ways towards restoring what was lost, although in a world filled with other things to read, it is too much to hope that most pragmatists will pause over this long enough to reclaim this bit of context that could render them such fine service. Yet, we should let historical faith have some room to work, so perhaps we have here made a beginning towards reaching a fuller understanding of pragmatism. Let us briefly examine the pragmatism of Royce and that of Boodin and leave the rest to faith.

Royce's Pragmatism

This is not the place for a full scale assessment of the extent to which Royce might be called a "pragmatist,' although a tremendous amount of work has been done on this topic already by, among others, Frank M. Oppenheim.[1]

[1] Oppenheim's numerous writings on Royce would not be easy to list, but concerning this

What is wanted here is a summary of Royce's commitment to pragmatism and a sense of what he took it to be. Pragmatism can be summarized as involving the following key ideas:

1. a commitment to the primacy of *experience* as the source and the final test of the value of philosophical reflection;

2. that philosophical reflection is a kind of critical problem-solving activity that needs to take its impetus from genuine (as opposed to hyperbolic) doubt;

3. that truth is understood in light of the way it addresses problems and genuine doubt in practice;

4. that practice and practical consequences are the measure of the value of philosophy, not vice-versa.

This is admittedly over-simplified, but it is enough to help us grasp Royce's pragmatism. Regarding the first of these, consider the following from Royce's 1895 address "The Conception of God":

> All that we know or can know ... must first be indicated to us through our experience. Without experience, without the element of brute fact thrust upon us in immediate feeling, there is no knowledge.... I absolutely accept this view. This is true and there is no escape from the fact. Apart from – that is, in divorce from – experience, there is no knowledge. And we come to know only what experience has first indicated to us. I willingly insist that philosophy and life must join hands in asserting this truth.[2]

The primacy of experience does not, for Royce mean simply, as with Kant, that we cannot philosophize in the absence of experience in general. Royce insists rather that *particular* experience is the source of all knowing, and that what is known is never without its contextual dependence upon particular experience. There is no "experience in general," but only the further clarification of practical experiences that accumulate as the history of the individual

question of his relationship to pragmatism, they culminate in his colossal study, *Reverence for the Relations of Life: Re-imagining Pragmatism via Josiah Royce's Interactions with Peirce, James and Dewey* (Notre Dame, Ind.: University of Notre Dame Press, 2004). So thorough is this study that it leaves one little to say by way of addition.

[2] Josiah Royce, *Basic Writings*, ed. John J. McDermott, 2 vols. (New York: Fordham University, Press, 2005), vol. 1, pp. 363–364.

grows. Royce means by "experience" approximately what Dewey and James mean by it, and all of them are in some way or another beholden to Peirce's articulation of the question. The primacy of immediate feeling and the elucidation or generalization of feeling into concept is the shared conviction of pragmatists, including Royce. Differences begin to appear when we consider both *how* feeling becomes concept, and in the extent to which the resultant concepts can be trusted in terms of warranting our conclusions, especially our philosophical conclusions. In this domain, we can think of Royce as the most sanguine of the pragmatists, the one who places the greatest confidence in the scope of philosophical conclusions to provide us with a sort of warrant that justifies our claim to possess philosophical "knowledge," although Peirce is plenty optimistic, Dewey less so, and James might be thought of as allowing to philosophy the slightest degree of generalization of its conclusions.

The continuum of views here is reflective not only of the temperaments of each thinker, and perhaps also the degree of their commitment to radical empiricism, but also the extent of their respective commitments to the role and function of the a priori in addressing the practical life (which is the functional inverse of radical empiricism). The more a thinker tends to focus upon the peculiarities and accompanying complexities of a particular problem in relation to its own context, the less likely he is to give broad scope to any generalization of its solution to other contexts. Also the degree of genuine doubt, as the response to a problem, becomes a measure of the importance of the problem itself – the more pressing is the doubt, the greater the problem. And here is where differences in temperament begin to become differences in the estimation of the power and value of pragmatism and of philosophical knowledge in general. All pragmatists agree that the type of thinking called forth by practical problems is a substitute for action, and that when action is taken, thinking has been completed. All pragmatists agree that where the action taken proves inadequate to solving the problem, we will withhold our affirmation that a "true" solution has been found. But regarding the relationship between action and thinking there is a world of *territory* – the place where psychology and philosophy meets. Alternatively, where the solution proposed by our thinking *succeeds*, there is another wide range of possibilities for its generalization, and this is a second *territory*.

But these two territories, these types of pragmatism, fare differently in the hands of the dominant pragmatists. Where psychology and philosophy meet, where the task is to explain in empirically responsible ways, the process by which feeling or immediate experience becomes concept, Dewey and James have held a great advantage. Not only were both of them more accomplished psychologists than Peirce and Royce, but the growing tendency in the twentieth century to place greater confidence in this aspect of knowing (precisely because it was more easily studied by scientific and other empirical methods than the second territory, i.e., how to generalize successful hypotheses) has tended to

elevate the Dewey/James type of pragmatism to the place of honor. Indeed, their brand of pragmatism has effectively crowded out all other senses of the term. This result is not entirely to be despised, because after all, the process by which our concrete problems become our conceptual problems bears mightily upon our prospects both for understanding them and solving them. But our historical emphasis upon this territory, while it has yielded increasingly refined ideas about social epistemology, has distracted us from the second territory and has occluded our sense of the full range of "philosophical" responsibility. For it is in this second territory, the effort to understand the relationship between a successful course of action and its proper generalization to other contexts, that issues of value, imagination, vision, and ideals resides. The Dewey/James pragmatism is notoriously weak in dealing with this side of the matter, while this is the very strength of the Royce/Peirce variety of pragmatism. Let us pause over consideration of these idealistic versions of pragmatism to understand better how they operate.

The difference between the radical-empirical pragmatism and the more idealistic pragmatism emerges most pointedly from cases in which the "problem" is primarily intellectual from the start, and the genuine doubt it inspires is intellectual doubt. Here, Peirce and Royce will employ a priori thinking, especially the *reductio ad absurdum*, and without hesitation generalize the results to other intellectual problems, especially philosophical problems. Success in addressing an intellectual problem gets the advantage of having used intellectual tools (logic, mathematics, dialectic), and since these tools are already conceptual, their proper adaptation to other intellectual contexts is something that can be safeguarded by a thorough grasp of method. So long as one does not enter a hypothesis that works at cross purposes with some other generalization previously made, and so long as one discharges all hypotheses before hopping from one level of abstraction to another, the results of a good deductive argument can be employed in new intellectual contexts.

Dewey and James are quite hesitant about this, not wanting to distinguish in any way that requires final commitment between intellectual and practical problems. This certainly protects them from making illicit moves in dealing with intellectual problems, but it also commits them to reinventing and re-justifying all their conceptual tools for the purposes of each new problem. In other words, the Dewey/James pragmatism is ponderous and unwieldy in dealing with very abstract problems, such as those one would associate with metaphysics. And, the Dewey/James pragmatism also offers almost no hope for intellectual advance in such subjects as pure logic or in any domain of thinking that requires the development of new logical tools for handling other types of intellectual problems (beyond philosophy itself). So while Royce and Peirce were hard at work on the logic of relatives, Dewey and James remained fairly silent. This silence is not so great a problem until one enters the domain of metaphysics, a domain in which even radical-empirical pragmatists need some

footing in order to offer some account of the value and role of ideals in setting out an ethics and a political philosophy. Here, Peirce and Royce have far better tools, although Peirce makes little use of them. Unsurprisingly, each of them was far better at metaphysics than James and Dewey, and with a solid metaphysics in place, ethics and political philosophy become more manageable, less ad hoc, and more inspiring.

So pragmatists begin to diverge over the relative independence of intellectual problems from practical ones, and the fruit of this divergence is harvested in how to handle problems that require some independence from present context (the problematic situation, concretely expressed), especially the role and existence of ideals in informing our present problems. This divergence results in differing conceptions of the scope of philosophy itself. While Peirce and Royce tend to see philosophy as a fairly restricted kind of reflection upon certain kinds of problems that are *already* conceptual in character, Dewey and James want to include the process of conceptualizing the problem as one of the practical aspects of philosophy itself. While Royce and Peirce will insist that the philosophical problem already comes in conceptualized terms, and that philosophy can assist us in re-conceptualizing it, and that this work is as much a priori as empirical, Dewey and James are leery of this move. While ideals are therefore treated as concrete concepts by Royce and Peirce, they are bloodless abstractions in James's estimation, and promissory notes in Dewey's view.

So the question comes down to whether a pragmatist can afford to entertain ideals, and reason upon them in metaphysical and logical fashion, without ceasing thereby to be a pragmatist. Naturally, all pragmatists retain a place for ideals in their philosophies, but how binding our reasoning upon them is, how determinate they are, how concrete, here there is great disagreement. Royce tends to follow Peirce in his estimation of what makes a concept "true," and it involves giving philosophy a broad authority to make judgments upon various formulations of ideals, and the formation of purposes, using a priori methods. Thus, Peirce and Royce are not only not averse to teleological philosophy, they think it an absolute requirement of good philosophy. Dewey and James allow philosophy no such authority, even over its *own* problems, and will not embrace teleological language in any but the most provisional ways.

The cash value of this difference? Whether today one ought to favor the radical-empirical pragmatism over the idealistic type in matters of value remains unclear, but certainly we are aware, with this much time and distance, that the inability of the radical-empirical pragmatism to articulate a vision of ideals that inspires the moral admiration of philosophers and ordinary people is one of the red marks on its side of the philosophical ledger of the twentieth century. The idealistic sort of pragmatism has not really had its audit at this point, for it has passed into trust without ever having its capital spent. Royce's nascent re-emergence into philosophical prominence may provide that opportunity for entrepreneurs who are willing to risk the investment, or perhaps it will remain

in trust until another generation is heir to it. Much of what needs a new consideration is contained in this volume, but readers should be aware that there is far more in Royce than this volume contains.

Boodin's Pragmatism

In to this very breach between the radical-empirical pragmatism and the idealistic pragmatism stepped John Elof Boodin (1869–1950). Boodin was at Harvard from 1897 to 1900, and was influenced about equally by James and Royce. He was extra-ordinarily sensitive to both the similarities of their views and the differences, and in many ways his life's work can be read as an effort to reconcile what each had right. Boodin is certainly not the only Harvard product who attempted this synthesis – William Ernest Hocking and George Herbert Mead come immediately to mind as other distinguished synthesizers. But Boodin was probably the most balanced and indeed, in my judgment, the best at balancing the competing claims without sacrificing anything true. Boodin had a talent for metaphysics that Dewey and James lacked, and while he was not the logician that Peirce or Royce was, he was far more adept with it than James or Dewey. Boodin also had tremendous patience with the interpretation of empirical data, surpassing the patience of Royce, if not quite equaling the patience of James. Of course, Peirce was enormously patient with nature, but less so with people. Boodin was a better writer than any of the four major pragmatists, including James, and this makes Boodin's work pleasant to encounter. In what follows I will restrict myself to discussion of those aspects of Boodin's thought most relevant to pragmatism.[3]

Boodin's work encompasses a number of books, and because it is practically unknown today, I will make an effort to summarize the whole gist of his thinking in the remainder of this introduction so that readers can better contextualize the excerpts presented here. Most of these excerpts come from Boodin's 1911 book *Truth and Reality*, and this is indeed a programmatic statement of the books that were to follow as Boodin built his system of thought. Let me therefore speak of "truth" and "reality," in reverse order.

Reality. Boodin articulates an original version of Royce's "Fourth Conception of Being." Royce had argued in *The World and the Individual*[4] that there were really four historical conceptions of Being in philosophy, four general senses in which philosophers say "it is": *realism* (to be is to be

[3] For a more complete summary of all the major elements of Boodin's philosophy, especially the "field theory," see my article on him in *The Dictionary of Modern American Philosophers*, ed. John R. Shook, 4 vols. (Bristol, UK: Thoemmes Continuum, 2005), vol. 1, pp. 283–288.

[4] Josiah Royce, *The World and the Individual*, First Series (New York: Macmillan, 1899).

independent); *mysticism* (independence is mere appearance, belying a deeper immediate unity of all that is); *critical rationalism* (to say that something *is* means to have an objectively valid idea of it); and Royce's own view that *to be is to be uniquely related to a totality or a whole*. In this adeptly dialectical survey, Royce reduces each of the first three conceptions to absurdity and contradiction, and their susceptibility to such reduction is the main justification for embracing the Fourth Conception. Without necessarily accepting Royce's criticisms of realism, mysticism and critical rationalism, Boodin embraces the Fourth Conception and actually employs it to restore to realism, mysticism and critical rationalism a share of the truth by placing them in perspective and context. Hence, Boodin's metaphysics is constructive where Royce's is more critical.

To realists Boodin concedes that discreteness is a genuine feature of the universe, especially the discreteness of individual selves, but he defines the relation not as pure independence, but as "reference to an object existing beyond the apperceptive unity of momentary individual consciousness." (TR 251) Here we see how the Fourth Conception of Being may be brought to bear on the reality of discrete individuals, and Boodin is an ardent advocate of realism in this sense. This is a kind of metaphysical (in the Kantian sense of "scientific metaphysics") contextualism. To the mystics (the view he favors the least) Boodin concedes that from each and every perspective there is a felt sense of the encompassing whole, but he will not grant to this felt sense any truth claim, only a feeling claim.[5] To the critical rationalists Boodin grants that wherever there is a truth about things, it is a species of meanings, and as meanings truth and validity have real existence. Indeed, "the meaning which moulds itself on the constitution of reality; which leads to the intended consequences, is precisely the *valid* meaning." (TR 202) But against the critical rationalists Boodin will not allow that any given instance of such real validity is final, permanent or a priori. Hence, determinate judgments of the understanding, in the Kantian sense of those terms, are objective only in their aim to *refer* to objects of actual or possible experience. These judgments are, however, revisable in light of the way that experience grows and changes, as it reconstitutes its objects and judgments in each new durational span. In placing meaning above truth in this way, Boodin anticipates Dewey, the phenomenological movement, and the existentialists. Boodin, then, grants more of a share of the truth about being to the first three conceptions than Royce had, and Boodin is less concerned with criticizing them and more eager

[5] See Boodin, *God: A Cosmic Philosophy of Religion* (New York: Macmillan, 1934), p. 195. Boodin has little praise for mysticism and much criticism in his corpus, but he grants it an important role, albeit grudgingly, in the immediate relation to the real. Hocking, of course, built his synthesis of James and Royce upon the rehabilitation of mysticism, so one need not wonder what that may look like. Simply consult Hocking's major works.

to draw from them for his use their portion of the truth. Although Royce, after reducing each of the first three conceptions to absurdity, a priori, often later invoked genuine insights from them and employed versions of them from the point of view of the Fourth Conception, one wonders how such invocation is appropriate after Royce's critique has been so ruthless and total.

For Boodin as for Royce, then, "to be is to be uniquely related to a whole." Boodin calls his version of the Fourth Conception of Being "pragmatic energism." The notion of "energy" was already quite important for Boodin as early as 1907, two years after Einstein had demonstrated its relation to mass and the speed of light, but it is important to point out that James had made a theme of this idea before Einstein, especially in *The Varieties of Religious Experience* (1902).[6] In *Truth and Reality* Boodin identifies three types of energy – mechanical (involving mass), electrical (including light and magnetism and any other area where mass is not the source of the changes observed – we would today add quantum electrodynamics, for example[7]), and "conative energies or the differences that our minds can make to each other and to things." (TR 303) While Boodin is unwilling to reduce these three types of energy to two or one, since empirical warrant was and is lacking, pragmatically speaking, he nevertheless offers a practical version of the Fourth Conception of Being in defining "relation to" as "making a (predictable) difference to," and this means to possess energy. That is, nothing is real which makes no difference to other things, and energy simply is "ability to make a predictable difference." (TR 303) This sense of the word energy "serves as a convenient name, however thin, for the whole world of process." (TR 303) Here we find epitomized both Boodin's speculative and his pragmatic leanings. He has sufficient pragmatic sagacity to suggest that "energies" are energies because they always make a difference, and then he has the intellectual audacity to make an end-run around the mind-body problem by pointing out that mental energies make a difference in the world as surely as do mechanical and electrical energies. Whether mental energies, electrical energies, and mechanical energies are all energies in just the same sense Boodin will not say – because he has no decisive evidence. Yet, he is willing

[6] See Boodin, "The Ultimate Attributes of Reality," *Journal of Philosophy* 4 (1907): 281–289. Here Boodin lays out briefly his "energism" and explains why the word "predictable" is used in his definition of energy. For a more detailed account see his essays "Energy and Reality, Parts I and II," in *Journal of Philosophy* 5 (1908): 365–375, 393–406.

[7] Indeed this is a safe insertion on our part, since Boodin lived just long enough to offer a brief treatment of a paper on this topic by John Archibald Wheeler and Richard Feynman when the latter were both young upstarts. See Boodin, *Posthumous Papers* (Los Angeles: University of California Press, 1957), pp. 97–100.

upon this basis to adopt the term "energy" as a "convenient name" for the "whole world of process," and to name his view "energism."

It must be clear that Boodin believes he is gaining something by invoking this term "energy" – something more than he could achieve had he simply defined reality as "to be is to make a (predictable) difference." This latter formulation seems to reduce all metaphysics to a pragmatic epistemology, which might sit well with James in his anti-abstractionist mood or Dewey in his instrumentalist mood, but hasn't sufficient attraction for Boodin (as indeed it did not for James or Dewey in other moods). The assertion of the idea that *energy* is what really *is* gives Boodin a toehold in physics and in psychology, in metaphysics and in epistemology, without committing him to the primacy of either side in these pairs. Hence, between the horns of the idealistic and radical-empiricist versions of pragmatism. To use Boodin's term, energy provides him with some "stuff" to talk about, and metaphysics is about "stuff."

What might be said about the cosmic "stuff" called "energy"? Among other things, it exists in fields that possess genuine forms.[8] But these forms are varied, contingent, dynamic, active, asymmetrically temporal, and creative. Boodin had begun his writing career by criticizing Royce's eternalism and advancing his own conception of time. And the only other reality apart from energy for Boodin is time. Time is not energy but "creeping, dynamic non-being." Time and energy have dynamism in common, but while energy is a constructive maker of differences, time is a limiter of differences that can be made. Time is not sequentiality or seriality for Boodin (and here he follows Royce's critique of Kant), but an intrinsic mode of limitation in energistic processes (and here the idea is entirely his own). As we know, not just *anything* can happen in the universe, but in energy (as defined) we could identify no particular reason for this. The reason change occurs intelligibly in energies as they modify one another is because time limits it. Yet, no change would be intelligible for Boodin unless there were a *direction* to the change. There need not be an ultimate or fore-ordained end of all change, but time limiting energies in their processes of mutual modification does not a universe make. These energies must be *achieving* something, and indeed, mind itself is one of the "directions" that the universal process has achieved. We see here echoes of Peirce's notion of the "law of mind," and indeed, Boodin was in Cambridge when Peirce gave his 1898 lectures on logic that were so

[8] The "field" concept is most thoroughly discussed by Boodin in *God: A Cosmic Philosophy of Religion* (New York: Macmillan, 1934). See also Boodin, *Cosmic Evolution* (New York: Macmillan, 1925), p. 192; and *The Social Mind* (New York: Macmillan, 1939), pp. 158–159, 161 n.32; and *Posthumous Papers*, pp. 10–11, 84, 88, 97. James was working with the idea of "fields" in the metaphysical sense when Boodin was a student, but never came to any satisfactory conclusions about the idea.

epoch-making for Royce. The point is that it is no accident that the mind, when it knows, knows by detecting both the pattern and direction in differences in its own experience. The mode of limitation (time) and the mode of construction (energy) are already present. Mind is both the outcome of a past process and a part of the on-going process of energies, as limited temporally, engaged in mutual modification. One cannot think everything at once, and time prevents these energies from collapsing all into a single nexus of disorganized energies. Mind is already itself a *direction* energies have taken, and it is unsurprisingly attuned to other processes which follow similar directions. Boodin does not think the entire universe has to be known by minds, or even be intelligible to minds (and here he departs markedly from Royce), but he does know that mind will not detect any change that has no direction. Thus, *value* in the form of directional, temporally limited change is immanent in all meaning, and hence in all truth judgments.

Truth. While far more could be said about reality according to Boodin, we are now in a position to say something of his view of truth. We have already noted that meaning is more fundamental than truth for Boodin, and that truth is one kind of meaning. This marks him as a pragmatist in an important way, as I mentioned earlier in the discussion of Royce. Truth has its roots, for Boodin, in "certain instinctive demands of our nature." (247) We are beings whose existence and development has had a *direction*, historically, and the directionality of our past development lives on in our present instincts. These directions, raised to the level of reflection, present us with ideals – future purposes to be achieved in experience, immanent now in the way that limiting time and constructive energies permit. Boodin aims in this connection to present an epistemology he calls "pragmatic realism," and is thus obliged to say what he means by both terms.

Regarding the "pragmatic" side of his epistemology, Boodin is attracted by the way that pragmatists emphasize function in truth, and see it as a means of regulating conduct in concrete experience. In this connection, Boodin offers a set of functional postulates that enable us to set off truth from non-truth in reflecting upon and returning to experience. These postulates are "presuppositions" that are "implied in all knowing." (TR 126) These are the "laws" of consistency (logical requirements of thought), totality (systematic connection of thought), duality (subject-object relation in all consciousness), and finitude (that all thought must be finite). A more admirable combination of Roycean and Jamesian theories of truth would be difficult to imagine. These laws show in a general way how truth claims all share certain functional presuppositions in the absence of which no evaluation of a truth claim can be achieved in experience. An allegedly infinite thought, or a thought with no thinker or no object, or a self-contradictory thought, or a thought with no systematic relation to a larger whole of experience can make no *predictable* difference in experience. Hence, the thought fails to have the energy which

thought *is*. It cannot be true. But in noticing this pragmatic feature of truth we have not solved the problem of truth in the least. The fact that truth functions in experience points us *towards* the deeper epistemological issues rather than solving them. And here Boodin makes no secret of his impatience with pragmatists who may take their functional account of truth and try to slip away from the conversation before someone asks "why?" As Boodin states "But is truth not reality? the hard-headed critic always comes back." (TR 189)

The deeper problem that a pragmatic conception of truth points us towards is that while we rarely if ever aim at the whole of reality in stating a truth, nevertheless truth is something that "is always teleological, because it exists for the sake of a relation to a larger whole." It is not enough simply to recognize that all our thoughts presuppose connection to our other thoughts. We must also recognize that *truth exists*, and in so doing bears a relation that *is* a direction towards the whole of reality. What Boodin is articulating here is an idea very close to the more celebrated distinction later made by Dewey between (mere) warranted assertibility and Peirce's conception of "truth" as the opinion fated to be ultimately agreed to by all who investigate, while "the object of that opinion is the real."[9] It is the recognition that truth must, beyond its functionality, point us towards what is *real* that grounds Boodin's *realism*.

Here we arrive, therefore, at a sense of the second of the two terms with which Boodin names his epistemology, "pragmatic realism." To be a realist in epistemology does not mean we must embrace unconditionally the mind-independent existence of objects subsequently known. Rather, we must accept that in knowing anything we know more than our minds. What we know is the meaning and direction of a particular and unique standpoint upon the real, a perspective. And this restates epistemologically the Fourth Conception of Being, as I earlier indicated. Objects might exist without ever being thought, but they could have no significance or meaning if they did – i.e., nothing would be "true" of them. To make objects depend upon thought for their *existence* is the mistake idealists, such as Royce, make according to Boodin. But there is an important gap between saying nothing could be *true* of unthought objects, and saying unthought objects cannot *exist*. The former view is consistent with realism, for Boodin, while the latter is not. One cannot know the latter claim is true, and in making it one reduces the object of thought surreptitiously to one of its functional presuppositions (the law of totality) and eliminates its intrinsic reference to any reality, including the reality of its own existence. Hence, Boodin's realism is actually implied by his

[9] John Dewey, *Logic: The Theory of Inquiry*, vol. 12 of *The Later Works*, ed. Jo Ann Boydston (Carbondale: Southern Illinois University Press, 1986 [1938]), p. 343n.

fallibilism – thought is limited metaphysically by the way time, energy and direction are manifest in thought, and in terms of the content of thought by the way the object of thought presupposes certain pragmatic or functional laws, while it simultaneously bears a concrete and positive relation to other (mental and non-mental) energies to which it necessarily refers. This is the context of thought, its finite intent in relation to its temporal existence.

Conclusion

Boodin's theory is far more nuanced than this brief summary can show, and far more impressive. Yet, it is hoped that this short account might encourage the reader to explore not only this book, but also Boodin's subsequent books in which the details of this general philosophical position are worked out in exquisite detail. Boodin sacrifices neither artful prose, nor empirical detail, nor systematic organization and logical acumen in offering his worldview. This is a rare achievement in philosophy. He stands between the idealistic pragmatists and the radical-empirical pragmatists in a way that still has not been surpassed, offering a path to the rehabilitation of much of what needs to be saved from idealistic pragmatism without in the least giving in to its a priorism.

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Section One

Writings by Josiah Royce

THE ETERNAL AND THE PRACTICAL

Josiah Royce. "The Eternal and the Practical." *Philosophical Review* 13.2 (March 1904): 113–142.

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There are two general tendencies of opinion which nearly all recent thinkers, whatever be their school, seem disposed to favor. The first of these tendencies is that towards a considerable, although, in different thinkers, a very varying, degree of empiricism. "Radical empiricism," such as that of Professor James, has its defenders in our days. A modified, but still pronounced, empiricism is found in more or less close and organic connection with the teachings of recent idealists, and of various other types of constructive metaphysicians. The second of the contemporary tendencies to which I refer is closely associated with these modern forms of empiricism. It is the tendency towards what has been lately named 'pragmatism', the tendency, namely, to characterize and to estimate the processes of thought in terms of practical categories, and to criticise knowledge in the light of its bearings upon conduct.

I am speaking, so far, not of precisely definable theses, but expressly of tendencies. Whatever may be the rationalistic bias or tradition of any of us, we are all more or less empiricists, and we are so to a degree which was never characteristic of the pre-Kantian rationalists. Whatever may be our interest in theory or in the Absolute, we are all accustomed to lay stress upon practical considerations as having a fundamental, even if not the most fundamental, importance for philosophy; and so in a general, and, as I admit, in a very large and loose sense of the term, we are all alike more or less pragmatists. These, then, are common modern tendencies, which thinkers of the most various schools share. In view of these facts, we have a right to rejoice in the degree to which we have come, despite all our differences, to a certain unity of spirit. On the other hand, even in recognizing this attainment of a certain degree of unity, we have also defined the central problems of modern investigation. They are, first, the problem as to the place which our acknowledged and indispensable empiristic tendencies ought to occupy in the whole context of our philosophical opinions; and, secondly, the problem as to the share which our practical postulates, our ethical undertakings, our doctrine of conduct, ought to have in determining our entire view of the universe.

I

Empiricism, its worth, its justification, its limitations, its lesson – these together form an old story in controversy. I propose in this address, which the kindness of the Association has called me to prepare, to ask your attention to the other of the two tendencies which I have mentioned. I shall try to discuss some of the general relations between our ideals of conduct and our acknowledgement of truth. I need not pause to set forth, in any detail, the well-known fact that the question thus indicated is in its general form by no means a modern question. Both Stoics and Epicureans made it prominent. Earlier still, in consequence of the methods of Socrates, both Plato and Aristotle gave it a significant place in their theories of truth. In modern thought, again, as I also need not at length describe, this problem is by no means confined to contemporary philosophy. Kant's contrast between the theoretical and the practical reason gave our question central importance for the structure of his own system of doctrine. Fichte's philosophy is a deliberate synthesis of pragmatism with absolutism. Hegel made the question a fundamental one in various places in his Logic. In the *Phänomenologie*, the romantic biography of the *Weltgeist*, as Hegel there narrates, the tale has all the principal crises due to the conflicts of the theoretical with the practical reason, while all the triumphs of the hero of this story consist in reconciliations of pragmatic with theoretical interests. Thus, then, the main problem of pragmatism is no more exclusively modern than is that of theism or of empiricism. The occasional efforts to represent the newer insights upon this topic as wholly due to the influence of the most recent doctrines of evolution, and as wholly replacing certain 'preëvolutionary' tendencies of thought, – these efforts, I say, where they exist, result from fondness for over-emphasizing the adjective 'new', – a fondness from which we all in this day suffer, whether we are philosophers or business men, promotors or investors, trustees of universities or humble investigators. There is, indeed, in a sense, a new pragmatism; for the thought of to-day has its own inspirations, and, like any individual tendency in the spiritual world, it is no mere echo of other tendencies or ages. But pragmatism is ancient, is human, has been faced countless times before and will be considered countless times again, so long as men labor for the good, and long for the true. We are here dealing with pervasive tendencies of modern opinion indeed, but not with startling new discoveries, – with questions of to-day, but with ancient issues also, – with problems which modern democracy may emphasize, but which old religions and social orders already made familiar to the wise men of yore.

For this very reason, however, now that I attempt to discuss some aspects of our problem in the light of contemporary interests, it seems to me advisable not to limit my discussion by attempting to keep within the bounds of a direct polemic against such recent expressions of opinion upon the subject as I do not altogether accept. There are several very notable volumes that have been,

of late years, devoted to making explicit certain forms of pragmatism. Professor James's inspiring *Will to Believe*, the recent Chicago *Studies in Logical Theory*, by the members of Professor Dewey's vigorous and productive school, Mr. F. C. S. Schiller's essays published under the title *Humanism*, – these are books of the day, all well known very probably, to every one of you. It would be a tempting task to try to review some one or perhaps all of them. But, as I have said, while the books and the persons are indeed new and unique, the issues are old. I am deeply interested in the persons; but I have time in this paper only for some few of the main issues. While I shall freely refer in general to the current literature of pragmatism, my main argument is one that would remain valid even if the issues of pragmatism were to come to our notice as ancient questions, and not as incidents of the literature of our times. While, then, I shall indeed refer now and then to this literature, I shall not try to treat it in any explicit way. Polemic, whenever it refers to any one author, must rest upon exposition; exposition requires more time than this occasion allows me, raises questions of an exegetical character, and usually dissatisfies the author whom you expound, unless in the end you agree with him in opinion. As Wundt once remarked during a literary controversy: "We are all most erudite with respect to our own books" ("Sind wir doch alle in unseren eigenen Büchern am besten bewandert"). I constantly try to become more or less erudite regarding the contents of other men's books; but this is no place to trouble you with an attempt to display such erudition, or to force my colleagues to point out how ill I may have succeeded in understanding them.

I propose, then, to try to state the relation of the doctrine of conduct to the theory of truth as if the question were not especially characteristic of to-day. I propose to treat it rather as a question of what I shall call eternal importance. This question is: How far is our knowledge identical with an expression of our practical needs?

Nevertheless, I may still permit myself to make one merely personal confession before I go on to my main task, – a confession which relates, indeed, to a totally ephemeral matter. Being, as I just said, more erudite than are the rest of you regarding my own writings, I may venture to tell you that once in my life, before I fell a prey to that bondage of absolutism wherein now I languish, there was a time when I was not a constructive idealist of any sort, and when, if I understand the meaning of the central contention of pragmatism, I was meanwhile a very pure pragmatist. Accordingly, I published in the year 1881, in connection with the Kant centennial celebration of that year, an essay entitled: "Kant's Relation to Modern Philosophical Progress." I was then twenty-six years old and had been deeply influenced by Professor James's earlier lectures and essays. My paper was printed in Dr. Harris's *Journal of Speculative Philosophy*. Nobody amongst you is likely to have remembered, even if he has ever read, that paper. It was a mere sketch.

But since it expressed a sincere effort to state the theory of truth wholly in terms of an interpretation of our judgments as present acknowledgments, since it made these judgments the embodiments of conscious attitudes that I then conceived to be essentially ethical, and to be capable of no restatement in terms of any absolute warrant whatever, I may assert that, for a time at least, I did seriously struggle not only to be what is now called a pragmatist, but also to escape falling into the clutches of any Absolute. When later, however, I fell, and came to believe, as I now steadfastly do, that it is one function of the truth to be, amongst other things, actually true, I do not think that I ceased to be, in a very genuine sense, still a pragmatist, although no longer possessed, perhaps, of what Hegel would have called the pure agility which I then used most earnestly to cultivate. I still am of the opinion that judging is an activity guided by essentially ethical motives. I still hold that, for any truth-seeker, the object of his belief is also the object of his will to believe. I still contend that the truth cannot possibly be conceived as a merely external object, which we passively accept, and by which we are merely moulded. I still maintain that every intelligent soul, however confused or weak, recognizes no truth except the truth to whose making and to whose constitution it even now contributes, – no truth except that which genuinely embodies its own present purpose. I earnestly insist that knowledge is action, although knowledge is also never *mere* action. I fully accept the position that the judgment which I now make is a present reaction to a present empirically given situation, a reaction expressing my need to get control over the situation, whatever else my judgment may also express. I fully accept the position that the world of truth is not now a finished world and is now in the act of making. All this I accept, even although I may nevertheless appear to be bound, by reason of my other convictions, fast in the chains of absolutism. All this I daily teach, even while, as a fact, my only final hope, as a seeker of truth and as a human being, is in the eternal.

At all events, however, now that I can say all this, perhaps it will not seem to you as if, when I undertake to discuss the relations of the principles of conduct to the theory of truth, I shall be doing so without any comprehension of the meaning and the human interest of pragmatism. As I said at the outset, we are totally, all of us, more or less pragmatists. The question is solely one regarding the due place of that side of our doctrine in the whole organism of our convictions.

II

Without expressly expounding or criticising the opinions of anybody else, although of course without attempting to be original, let me first try to state a doctrine that, according to my conception of the matter, emphasizes, as fully as I am able to emphasize, the motives upon which I suppose pragmatism to

rest. Then let me try to explain why I believe that this view of the nature of the knowing process must be, not merely set aside (for within its limits it is, as I conceive, a partial statement of the truth), but supplemented, so that it may be aided to state the whole truth.

To begin, then, the exposition of what I take to be the spirit of pragmatism, – thinking, judging, reasoning, believing, – these are all of them essentially practical activities. One cannot sunder will and intellect. A man thinks about what interests him. He thinks because he feels a need to think. His thinking may or may not be closely linked to those more worldly activities which common sense loves to call practical. But the most remote speculations are, for the man who engages in them, modes of conduct. As contrasted with other men, the thinker, so far as his thoughts do not directly link themselves to the motor processes usually called practical, appears, when viewed from without, to be an inactive person. An anecdote records how a servant woman in Darwin's household ventured to suggest that the old gentleman must be so delicate as he was in health because, as she said, he lacked occupation, and only wandered about looking at his plants, or sat poring over his papers. Whether the anecdote is true or not, the thinker often seems to casual observers to be inhibited, held back from action, hopelessly ineffective. But this appearance we know to be but a seeming. The thinker plans motor processes, and in the end, or even constantly while he thinks, these processes get carried out. The thinker makes diagrams, arranges material objects in classes and in orderly series, constructs apparatus, adjusts with exquisite care his delicate instruments of precision; or he takes notes, builds up formulas, constructs systems of spoken or written words to express his thoughts; and ultimately, in expressing his thoughts, he may direct the conduct of vast numbers of other men, just as Darwin came to do. Meanwhile, even if viewed from within, from his own conscious point of view, the thinker's ideas are not mere objects of contemplation upon which he passively gazes. They are known to him as his own deeds, or at least as his plans of action, whose presence to his mind is determined by a series of acts of attention, – of acts, too, which are inseparably associated with tendencies to use words or other symbols, to arrange external objects in orderly series, to handle his instruments, to control the material objects which concern him, and inwardly to affirm and to deny. And even affirmation and denial have typical outward expressions in conduct. A thought which has no conscious reference to a deed, which involves no plan of conduct, which joins nothing together that was so far divided, which dissects nothing that was so far whole, which involves no play of active attention from object to object, which voluntarily asserts nothing, and which denies nothing, which neither accepts nor rejects, but only passively contemplates, is no thought at all, but is a vacant staring at nothing in particular by nobody who is self-conscious. Thought, indeed, often involves a temporary suppression of outer conduct,

for the sake of considering plans of conduct. But plans of conduct, so far as they are not yet outwardly expressed, are known to our inner consciousness only when possible deeds are begun, but are more or less completely suppressed as soon as they are fairly initiated, – and the passage to the outward expression of thought is not due to the appearance of a new sort of consciousness, which alone is to be called volitional, and which, as volitional, is to be distinguished from every intellectual process. No, the transition from thought to externally significant conduct is rather due to the removal of certain inhibitions. These inhibitions, so long as they persist, keep the thinker from letting those activities which he inwardly rehearses, go free in the form of outwardly manifest words, of arrangements of external objects, and of expressive bodily attitudes such as are those of affirmation and denial.

For the rest, you have only to observe the motor activities of any vivacious disputant or lecturer who freely expresses his thought, to observe how intensely practical are the attitudes in which even decidedly abstract thinking processes inevitably display themselves, so soon as such inhibitions are actually removed. The vivacious disputant or expounder points out imaginary objects with his extended forefinger, and imitates their contour, their movement, their arrangement, their inner structure, by an elaborate display of gestures. His pointings are indices of his subjects; his mimicry portrays his predicates. He affirms by pounding with clenched fist against the palm of his other hand, or upon his desk. Or, again, in case of his more abstract and less contentious assertions, he perhaps gently lays his forefinger across the palm of the opposing hand, or lays it upon the forefinger of this hand, thereby quietly, but impressively, showing you how he has learned to lay his finger upon the very truth itself. He denies by means of gestures of avoidance, of aversion, or of destruction. He harmlessly, yet in a spiritual sense seriously, threatens you, his opponent, with frown, with glittering eye, with shaking fist, with attitudes of defiance, or of crushing intellectual hostility. He invites you, if you are nearer to him in opinion, by winning gestures to come to his embrace. If the controversy is vigorous, then as he affirms or denies, he clenches his jaws and shows his teeth, Or in scorn perhaps at your errors, he makes the well-known but less marked facial gesture that Darwin describes as the act of slightly uncovering the canine tooth on the side towards the enemy. If he becomes very calm, pursuing in his thought extremely abstract and elusive truths, his eye, or his pointing hand, begins to search out small or distant objects. I know a distinguished public lecturer who, whenever his topics grow problematic, follows cautiously with his eyes the lines where the wall and ceiling of the room meet, then perhaps lets them run down the corner of the room, where the two walls meet, and then calmly announces in words the result of his quest. I remember an aged and optimistic philosopher, now dead, whose every expository period was wont to begin with the suggestion of a problem, but to end with its often highly abstract, yet always triumphant

solution. His thoughtful and extremely mobile countenance was a mass of wrinkles, which time and the defense of the truth had worn. As each new sentence set out upon its lengthy course, and as the problem grew intense, this venerable thinker's facial wrinkles used to twist into a marvelous and often terrifying lack of symmetry. One wondered whether those tangled curves could ever again acquire a restful aspect. But as the end of the sentence approached, they always, at the fitting moment, triumphantly passed back again into a beautiful symmetry, and through this blessed relief of tension the evenness of the truth was at the close made quite manifest to everybody present. I do not indeed well remember what this philosopher's opinions were, so busy was I wont to become in watching his countenance. But I gathered that his optimism was a sort of inner comment of his consciousness upon his ceaseless joy in discovering how every muscular strain, whereby his facial wrinkles could possibly be complicated, was certain in the end to pass over into symmetry and quiescence. As he had for many years carefully experimented upon this topic, and as no twist of his wrinkles had ever yet failed to yield to this mode of treatment, he seemed to feel very sure about the universe. The subjects of his assertions might be as contorted as fortune chanced to make them; his predicates were sure to consist of symmetrical curves of relief, and so of peace. Such, you see, was the pragmatism of this venerable sage.

What such seemingly trivial facts illustrate holds true, in principle, of at least one aspect of the inner life of all of us. Our thinking is indeed from moment to moment a consciousness of our adjustment to our present experience. This adjustment is our own act. We perform this act, not capriciously, but because we find therein our conscious relief, our movement in the direction of the fulfillment of our own purpose. Unless I am interested in expressing myself, in actively reading my own purpose into my world, you shall not induce me, by any device, to know or to express any truth whatever about what is not myself.

III

These, then, are considerations which suggest an attempt, not only to define our thoughtful consciousness in essentially practical terms, but also to define the objects about which we think, yes, the very reality of which we are conscious, in similarly pragmatic fashion. For, in the first place, although objects of experience seem, from a well-known realistic point of view, to be given to us whole, with all their properties and relations, as objects independent of our will, and so as objects in their essence extraneous to our consciousness, – still an equally well-known critical method of reflection, when linked with the pragmatism whose basis we have now expounded, tends to destroy this realistic seeming. For what is directly given to us at any

moment (that is, what is immediately and *merely* given to us) is simply the fact of our special momentary need for further insight and for further action. What at any moment we actually see, what we clearly think, what we make out of the given, that is not merely given to us, but is also *ours*, – not ours as our mere caprice, independent of the given need, but ours as what Professor Dewey rightly calls our response to the situation, our furnishing of the needed predicates, our recognition of the object, our adjustment of deed to present want, in brief, as I should say, our expression of ourselves under the conditions.

Hence it is not true that we merely find outer objects as independent of our will, and as nevertheless possessed in all their independence of their various predicates, qualitative, relational, substantial, individual. We find them possessed of characters, only in so far as we ourselves coöperate in the construction, in the definition, in the linkage of these very predicates, which we then ascribe to the objects. Since, to be sure, our need of thus defining our objects is indeed given to us, as this brute fact of our momentary need itself, as the bare datum that we must indeed act in order to succeed, and since, in case we are said to come to an understanding of our objects, we succeed in dealing with our need by virtue of just these special acts of ours, that is, by virtue of making these assertions, of ascribing these predicates, of living out just these beliefs, – since, I say, all this is true, we are accustomed to say that it is the object itself whose nature forces upon us just these predicates. For, in order to relieve our need, we are indeed constrained, in general, to define our object thus and thus. But, as a fact, nothing can force you except your own need. If you have no interest in the object, its supposed independence of your will can impose upon your will no recognition of this its barely external nature. You observe what you need to observe; and in observing you partly fulfill your purpose by diminishing your need; and what you find, as you thoughtfully review your observations, is the expression of your own thoughtful nature in the object, – an expression always conditioned by your need, but also always conditioned by your devices as a thinker, by your categories, by your modes of activity. For instance, does your observed object, as you dwell upon it, come to be possessed for your consciousness of definite numerical complexity? Then that is because you have needed to count, and, counting, have not merely found, but have constructed, both your numerical predicate and the relation of one to one correspondence between the constituents of your predicate and the attentively seized constituents that you now indeed find in your object, but find only in so far as your need has led you, dwelling upon these elements, to divide by your attention what sense furnishes to you only in that problematic confusion which constituted your very need of counting. Thus counting is an expression of your purposes; and sense, when uncounted, shows you no definitely numerical groups; but, at best, furnishes the stimulus and the support of the need to count. This case is typical.

What holds of numerical complexity, holds of every intelligible aspect of experience. What you find, then, as barely given in your experience, are needs that can be thus or thus met, tensions that can be thus or thus relieved by the response of your intelligence, and objects that possess a meaning, only in case you behold in these objects the expression of your own work in meeting your needs. As Kant said, you can get nothing defined and intelligible out of your object except what you have put into it. Yes, as Kant might have said, you get nothing defined and intelligible out of your object except when you merely reflect upon what even now you are putting into it, by active responses to stimuli, that is, to needs, – responses which tell you what your object is only by letting you see what just now you must do about your object. To be sure, since your need at every point accompanies, and so moulds your deed, you never feel free to think this or that of your presented object. For you are bound fast by your own need. The object is therefore yours to construct, but not your to create; and this again is what Kant said. And this is the aspect of the object which realism falsely emphasizes. My need is the controller of my will; though even my need, although given, is not given as an object independent of my will. When realism asserts that, independently of me, my object is possessed of the characters that my intelligence is forced to find in it, the truth of the realistic assertion, as it is usually formulated, seems to lie mainly in the validity of the social judgment that anybody, possessed merely of my needs and of my present resources, would perforce define his world just as I now do mine. This social judgment is human; but it is itself only the expression of one of our deepest needs, namely, the need of companionship, the need to acknowledge the presence of our fellows and to sympathize with their needs. Apart from this social basis of realism, the ordinary realistic interpretation of experience would turn upon the most barren of fancies. The object is never merely given to me, but is given only as the result of a process. It is that which, through my own construction, I find as the momentary expression of my own effort to satisfy my needs. Now sunder that which I thus find from that constructive life whose expression it is. Say that not only before I needed, but before anybody needed, and quite independently of my need, or of any need, there was and is that which my need led me to find as my construction. To say this is realism. And this is what I call a barren fancy, because, when one looks closer, one finds that to say this becomes needless.

Over against such realism, the pragmatism that we are now defining rightly insists, I think, that what you find in experience is what it is found to be, namely, an object in so far as it is characterized through and in your thoughtful deeds.

IV

So far we have, then, the statement of the foundations upon which rests, if I rightly understand the matter, what I shall call pure pragmatism. This pure pragmatism, as we shall soon see, is held unmodified by nobody. Yet there exist those who often speak as if this were their whole doctrine of knowledge. Let us, then, for the moment, take this doctrine as it stands, and try to be for a moment pure pragmatists. If what we have just stated shows the nature of our thought and of its objects, what room is there left for any form of absolutism? This fluent realm of transient meanings, where whatever is merely found, as brute datum, is nothing more than a query, a problem, a need, while whatever is both found and characterized, that is, whatever is experienced as a whole, intelligible, present object, is inevitably an at least partial fulfillment of a present need, – well, to what universal laws of thought or being can such a realm conform? Can such a realm be the expression of any truth that is either eternal, or absolutely authoritative? You have your needs, I mine. We both change our needs. What youth hopes is not what age demands. The morning and the evening bring different needs. Let us be pluralists. If, like my venerable friend, any one of us is in need of such objects as, when conceived, give his facial wrinkles symmetry, and his soul peace, and if, by chance, he can uniformly get what he needs, – well, what he gets is his truth. Who amongst us has any better truth? Who wants anything but a prevailing triumphant state of mind? If thinking gives us such a state, we call our thoughts true. Has the word 'truth' any universal meaning whatever except this? When I say: "This belief of mine is true," what can I mean but: "This belief of mine just now meets my conscious needs"?

As soon as we raise this question, we all indeed begin, even as pure pragmatists, to observe, just a little uncomfortably, one need which we have indeed already mentioned, but which we have not yet explicitly defined. It is the need that I before called the need of companionship, the need not only of thinking for ourselves, but of finding somebody who either will agree with us, or else at least, to our mode of thinking, *ought* to agree with us. This need also is a human, and so far, in our account, is an empirical fact, a brute datum, like our other needs. Perhaps it has no deeper meaning than has any rival need of our wavering wits. But, at all events, it is a need that goes along with his other interests to make the philosopher. For a philosopher, however much he may love to speak with tongues, becomes uncomfortable if he chances to observe that he seems to be edifying only himself and not the brethren. My venerable friend aforesaid obviously desired that we who listened to him should all somehow learn to wrinkle our faces just as he did and just when he did, and should so attain the same blessedness as that which he enjoyed. I notice a human weakness of a similar sort even in the most stubborn pluralists, – even in those who come nearest to being pure pragmatists. I find, namely, that a pluralist, when he criticises me, always wants me

to come into unity with him. And I notice that this weakness also shows itself in a very marked and, as I think, partially justified disposition to expound pragmatism in forms which are not altogether pure. There are those who often speak as if they were pure pragmatists. Yet their doctrine has always another side; and the existence of such additions as are often made to doctrines that at first seem to be pure pragmatism shows, I judge, that there is some difficulty involved in leaving the problem of knowledge just where our previous exposition has so far left it. Something is still lacking to complete our picture of what we call truth. For consider: You shall open some accounts of modern pragmatism which, to judge by some of the expressions used, seem to be attempts at pure pragmatism. Yet, as you read further, you shall learn that philosophers ought to take especially careful account of that greatest of modern discoveries, – the doctrine of evolution. Everything is a product of evolution. Must not thought be such a product? Obviously it must. But now, as you further learn from such expounders of pragmatism, one great merit and recommendation of such pragmatism as I have just tried to illustrate is that it shows how, not only thought, in general, but the special categories of thought, categories such as truth, objectivity, reality, are all products of evolution, and of a process of evolution which is determined by need, by stimulation, by the environment, by the growth of our organisms. What we believe thus appears as a result, like our other reactions, – like fire-making, like engine-building, like money-getting, like art, like the family, or like eating and football playing, – a result brought about by the character of our organisms, by the environment that plays upon us, by the desires that burn within us. Thought and its inner products show you, much as these other incidents of evolution do, reality in the making. The processes of thinking, the acknowledgment of these and these objects as real, of these and these principles as true, the toils of science, the warfare of the creeds, the speculations of the philosophers, – these are all like the cat's pursuit of the mouse, or like the kitten's flight after its tail, simply forms of adjustment to the environment. It is, then, a great recommendation of pragmatism that it comes into line with natural history, that it drops the methods which were common in 'preëvolutionary' ages of thought, and that it conceives truth, being, logic, and all the rest of the objects of philosophical reflection, as, like eating and living, mere incidents of that well-known universal process of evolution. You accept evolution. Well, then, pragmatism is a corollary of evolution. Thus are philosophy and science to be reconciled. Now all these observations about the relations between pragmatism and the doctrine of evolution may have their great value in another context. I am not doubting their intrinsic interest. What I inevitably note is, however, that when a man talks in such terms, he seems to me not to be any longer expounding a pure pragmatism. I do not blame him for this. But I do wonder that he will often speak as if he meant to be a pure pragmatist.

The evidence for pure pragmatism, if there is such evidence, must rest on what you now can observe, as to your present thought and its objects. The evidence for the doctrine of evolution must rest upon beliefs that relate to vast numbers of objects such as are supposed somehow to have existed long before you or I or any human being could have been there to acknowledge their existence. Tell me first that you are a pure pragmatist, and that you accordingly believe whatever you just now find it needful for you to believe; and I can, up to a certain point, understand you. Then add that, having read modern books, or having worked in the field, or in laboratories, you just now find it needful to believe in something called evolution, and accordingly to believe in a world that existed before all human beings existed, to believe also in an object called an organism, in an object called an environment, and in various other such conceived objects, and still I follow you. But tell me that you are a pragmatist *because* pragmatism logically follows from the truth of this doctrine of evolution, and then indeed I fail to see what you mean. For when you say: "The doctrine of evolution is true," I ask you: "In what sense true?" If you reply: "True in the pragmatist's sense, viz., as the object of my present conscious and constructive thought, which conceives evolution as a truth, because just now I need so to conceive it"; – well, then you state your pragmatism first, and define your belief in evolution solely in terms of your pragmatism. How, then, can this belief in evolution, – a belief which is a mere instance of your pragmatism, – lend back any of its borrowed authority to furnish a warrant for your belief in the very doctrine called pragmatism, a belief which you presuppose in expressing your evolutionary creed?

But, on the other hand, if you say: "The doctrine of evolution, as a universally valid result of modern science, is to be accepted, not in the pragmatist's sense at all, but because this doctrine, whether we happen to need to believe it or not, is true"; well – then you have once for all either abandoned, or else have profoundly modified, your pragmatism. You have, perhaps, become a realist, or maybe an absolutist. In any case, your belief in evolution can then furnish no warrant for your pragmatism; because in that case you have denied pragmatism in order to define the sort of truth that you attribute to the doctrine of evolution.

Why, then, does a pragmatist, who often speaks as if he meant to be a pure pragmatist, nevertheless boast of his fidelity to the doctrine of evolution? Because, I answer, despite his occasional speech as if he meant pure pragmatism, he is not a pure pragmatist. For all his pragmatism, he does not quite like to confess that he is an evolutionist *merely* because he just now feels the personal need of being an evolutionist, precisely as other people may feel their need of being Mormons, or of believing in witchcraft, or of squaring the circle in some particular way. And, as a fact, he is not an evolutionist in the sense of such pure pragmatism. He is an evolutionist in the sense of supposing not only that he does just now need to believe in the doctrine of evolution,

but that he *ought* to need so to believe. And he strengthens in himself this sense of the ought by reflecting that he lives in an evolutionary age, and that the experts have settled the question in favor of evolution, and that, by appealing to this well-known presupposition, he can get hearers for his doctrine of pragmatism. For a pragmatist, I repeat, is a companionable person; and, moreover, he rightly thinks that he ought to be so. He is not content to see for himself that his opinions have merely the pragmatic sanction; he wants us to agree with him about this very matter. In fact, he needs that we shall find ourselves needing what he needs.

Two motives that tend to modify pure pragmatism appear even in this brief sketch of its complications. Even a pragmatist who wants to be a pure one has an inevitable conception, not only of what he now needs, as he utters this judgment, but of what he ought to need in order to get a warrant for the judgment. And he also has a conception of the need of finding companions who shall be persuaded to agree with him, or who at least ought to be persuaded. Pure pragmatism would be, after all, a lonesome kind of doctrine. I need, and need just now, to assert myself thus. Hence, I judge thus. Hence this is true for me. How obvious all that is! Yes, but how barren, unless I can add: "My need is the human one; it defines a ruling, a standard need. I *ought* to need just this assertion of just this object in view of this situation. I ought; you ought; humanity ought, to characterize this object thus." Only when I can speak thus do I feel at home. Hence a natural fondness of the pragmatist for using terms that suggest appeal to current popular opinion. Evolution is today not only a result of science; it is a catchword, a name for a celebrated 'merger' of all sorts of securities. If you only join the two words 'social' and 'evolution' in your speech nowadays, everybody at once listens to find out what you have to say. Hence, if you want really to feel at home with even your innermost reflective doctrine, you must characterize it as having an important bearing on the structure of society; and you must show it to be a corollary of the doctrine of evolution. Then only are you quite sure of it!

But, then, in what sense do these perfectly normal and natural tendencies inevitably modify your pure pragmatism? I reply, on one side, they illustrate the pragmatist's main thesis; on the other side, they indeed do modify it. They illustrate it; for this tendency to define pragmatism in terms of evolution is itself the expression of an inner need of the pragmatist who makes the evolutionary appeal. This fondness for companionship, which shows itself in a tendency to confirm pragmatism by a use of popular catch-words, notwithstanding the obvious fact that the only logical basis for pragmatism, apart from purely expository illustrations, must be a purely individual and interior reflective process, whereby we notice what happens when we judge, – this fondness for social confirmation, I say, is again the expression of one of the needs of the pragmatist thinker, who all the while teaches that truth, for him, is merely the result of his need for control over his own experience.

Yet if these tendencies, on the one hand, illustrate pure pragmatism, on the other hand, they, with equal obviousness, modify the form that it assumes in the consciousness of the pragmatist himself. He needs, – but *what* he needs is to recognize that his truth is something *more* than the result and expression of his present need. He judges of his objects as he needs to judge; but one of his needs is to be satisfied that his need ought to be what it is. He expresses himself as he just now is; but he aims to express himself so that his fellow may also be one with himself. Inevitably, therefore, the very need of the moment needs control by another than itself, yet by somewhat that is not alien to itself. It needs control; for so soon as it recognizes that it is logically no better than any other possible will to believe, as for instance, no better than a will to believe in witchcraft, or in fairyland, it recognizes its own emptiness. It needs, therefore, control by some other than itself; for a valid principle that should determine what, under given conditions, is the right and rational need, is not identical with the passing content of any merely momentary need, But when the need of the moment thus needs to be controlled, the control that it seeks is not that of a realistic object, independent of itself, but that of some universal expression of need, – an expression that simply makes conscious what the need of the moment is trying, after all, to be, namely, a rational and binding need. Hence, at the moment of expressing one's pragmatism, one loves to appeal to well recognized objective truths, – to evolution, to common sense, to whatever is likely to seem universally valid.

V

We have thus prepared the way to state wherein our first statement of pragmatism has to be modified, even in order that its own need should be expressed.

"I believe what now, with my conditions, and my needs, my judging activity constructs as the present truth for me": there is one form of the assertion of pure pragmatism. All this, we have said, is obvious and barren. Why barren? Because one of the things that I seek, when I judge, is to express something that shall have some value as a standard. A judgment is not only a construction, but a resolve; not only a response, but a precept; addressed possibly to other men, to myself at other times, to whatever reasonable being there may be who has wit to understand me. It not only says: "I believe"; it says: "This is to be believed." The one who judges wills not only his own state of mind, but other states of mind, which he conceives to be constructed in accordance with the rule laid down in his judgment. Unless he does this, he does not judge; he merely croons, or wrinkles his face, or plays with his mental images. Whoever judges is a pragmatist; but, as we have already seen, he means to require you to believe him. And therein he becomes more than a pragmatist.

And so, in case you first judge, and then as a pure pragmatist observe that your judgment is merely your present reaction to this present conscious situation, the very observation, if it is sufficient to your mind to characterize your whole process of judging, at once takes the whole life out of what was but just now your assurance. That is precisely what I do not want my present judgment to be, namely, this momentary feat of attentive agility. I want it to have authority. Suppose that I assert something, and that thereupon my critical neighbor pityingly says: "Yes, no doubt *you* think so." Why may this retort seem insulting? Because it pretends to reduce my judgment to a mere attitude of my own. Now that is just what I do not want my opinion to be. But suppose that just this retort is the *only* one that I am able upon reflection to make to myself. Well, then indeed I am a pure pragmatist. But hereupon my judgments lose all their deepest interest. They do not meet the principal need that they all the while believed themselves to be meeting. It is as when one wakes from a dream-conversation and finds himself talking alone in the darkness. He was but just now responding to the situation according to his insight. He hereupon observes that both situation and response were merely his own momentary datum and construction. How lonesome is this new insight! Now pragmatists, indeed, do not usually feel lonesome. They are excellent companions and very fond of rational society. We have seen why they do not feel lonesome. It is because, like others, they take their judgments about evolution, society, humanity, the good, and the like, to be possessed of a character that no pure pragmatism could express. Having first believed these judgments in the ordinary way, namely, as having an authority which is not of the moment, they then add to all these insights that of their pragmatism; and their pragmatism now seems to them an interesting addition to the rest of their natural history. And so at moments they can speak as if this were a pure pragmatism. This, however, they never really mean.

"But," you may object, "in answering thus the contention of the pure pragmatist, one only illustrates the more, as has already been admitted, the pure pragmatist's own position. For this need to give our judgments authority, this longing not to be merely expressing ourselves as now we are, but to be laying down a rule for ourselves at other times, and for other selves, what is this but one of our present and conscious needs? Do we get authority by merely willing to have it? Do we legislate for other individuals merely by longing to legislate? What have we, after all, when we judge, but the resolve to speak for others than ourselves? Is the resolve the accomplishment, except precisely in so far as it accomplishes itself in just the present judgment?"

You see the point that we have reached in following our problem. The situation is indeed baffling. If the pure pragmatist speaks to us, and so speaking asserts himself, he speaks as one having authority. He may talk of evolution, or he may otherwise bring his doctrine into line with what he conceives to be natural facts or general human concerns and beliefs. He will

talk of such matters as if he were a realist, or an absolutist. And there is one thing that at the very least he will assert, namely, that his account of the process of judgment, and of the relations of the judgment to its objects, is a sound and true account, which everybody who rightly examines the process of judgment will see for himself to be true. As a teacher, then, the pragmatist is much like any other professor. He has his little horde of maxims; he proclaims the truth; he refutes errors; he asserts that we ought to believe thus or so; and thus lays down the law as vigorously as do other men. But, on the other hand, if the pragmatist, trying for the moment to be a pure pragmatist, reflects upon all this that he has uttered, and upon all this labor that he has done under the sun, then he must observe that in case his own view is as a pure pragmatism correct, he has instructed nobody at any time but himself as to any genuinely common truth; since, at every instant, he has merely been assuming fluent attitudes of his own, attitudes precisely as significant as were my venerable friend's symmetrical wrinkles. For upon each occasion of thought, he has faced an inner situation of his own, and has opposed thereto a certain gesticulation called a predicate, and has therein found a certain triumph of what some would call his reason, while he now might well merely call it his own state of mind.

These, then, are the two aspects of the situation of the pragmatist himself. If the pragmatist has taught us a truth, then he has done something more than assume his needful inner attitudes. But if he has merely adjusted himself to his conscious environment by means of his own inner mental construction, then he has instructed nobody and has refuted nobody; and has said nothing that has any genuine meaning for anybody but himself. Accordingly, even when he has contradicted absolutism, in uttering such a contradiction he has merely assumed an anti-absolutist inner attitude of his own. Hence that attitude has involved no refutation of anybody else. The pure pragmatist, therefore, contradicts nobody but himself when he asserts that other people, say absolutists, are wrong. For none of his assertions can relate to anybody but himself as he happens to be when he makes them. So much, then, for the situation of the pragmatist, just in so far as he tries to be a pure pragmatist. But our situation, as his critics, seems to be for the moment at least decidedly complicated. For we can criticise him only by pointing out to him conscious needs that his account of the judging process somehow does not meet. If these needs are not his own, we have not refuted him. If they are his own, then their presence refutes him only because his doctrine, namely, the doctrine that a true judgment is such by reason of its success in meeting the needs that it attempts to meet, is illustrated by our proposed refutation.

How shall one sum up the meaning of these complications? They are not arbitrary inventions of anybody. They belong to the very essence of the situation of any finite thinker. I know of no way but to accept the conscious situation that we find, as well as to observe with the pragmatist that all this

our finding is inevitably no merely *passive* acceptance. When we *both* act and reflect, both observe and construct, are both pragmatists and theorists, what we make out about the meaning of all this fluent process of knowledge is to be summed up, I think, as follows. Hereby our pragmatism will be, not abandoned, but modified.

VI

I have spoken of the need for companionship in our judgments as itself merely one of our given and human needs. But my illustrations have brought to mind, I hope, what I now venture to state as a general principle. It is this: When we feel the need of appealing to somebody else, or to ourselves at other times, in order even to express our opinion that our judgments have a warrant, this our need for companionship is precisely coincident with our need to regard our judgment as true. When the cat pursues the mouse, she presumably does so because she needs the mouse. But if she consciously asserted: "This is a mouse," she would need another cat, or some other critic of truth, as the being who ought to agree with her as to the truth of this assertion. I react to my environment as this present self. But if my reaction is a judgment, it is not only a bit of pure pragmatism; it is an appeal to a judge of truth whom I conceive either to be judging as one ought to judge, or else to be in the wrong. That I feel the need of such appeal, is itself at any moment, indeed, a mere datum, like any other momentary need of mine. But it is just this need that constitutes me a rational being. Let a pure pragmatist undertake to deny this assertion if he will. In denying he will merely assert that I ought not to make it; and in so denying he will appeal to a sound and rational mode of judgment passed upon consciousness in general. As for his own pure pragmatism, he either judges himself that it is a true account of judging in general, or he is no believer in his own doctrine. But if he is a believer in his own doctrine, then he judges that he characterizes our judging consciousness as another person than his present self ought to characterize it.

In brief, to believe that my judgment is true, is to believe that another point of view than my present point of view, in case this other point of view is what it ought to be, actually confirms my own judgment about this object. This other point of view, however, is a point of view that relates to the same object, or else it could not be conceived as confirming my judgment about this object. Whoever believes seriously in the truth of his judgment, not only explicitly makes this present judgment, but implicitly believes two further things, namely: (1) That there is another conscious point of view than his own, and a point of view from which this same object is viewed; and (2) that this other point of view, without being a mere copy of his own, and without his own being a mere copy of it, is so related to his own point of view that each ought to agree with, to supplement, to enlarge, and to confirm the other. Now

while the need to assert the reality of this other point of view is, indeed, one of the needs of the present judging consciousness, it is utterly vain to say that this need is fully *met* by any fact that the present judging consciousness of a finite being itself now constructs and finds present. For if what I find is for me merely my present opinion about my present object, and if I view this opinion merely as my present construction, then I simply do not view my opinion as true at all. I then view it merely as my state of mind. But if I view my opinion as true, I demand that another than my present self shall accept this opinion. This is the very nature of the truth-asserting consciousness. Such a consciousness lives in the light of another than itself. Yet it conceives this other than itself not as a realistic outer and independent object, but as a constructive self, like itself, yet other than its present self, – its own companion, because its own extension and wider expression. The judging self conceives itself as not fully expressed in this judgment, but as needing its own *alter ego* to aid it in its own expression. Herein the cognitive reactions of finite beings are different from other reactions. They seek, indeed, their own; but they seek it not merely *as* their own. They view themselves as essentially partial functions in a process whose unity is subject to one rule, the *ought* of the truth-seeking activity, whose object is this identical object, but whose variety is the actually required variety of points of view regarding this one object.

If this is of the essence of the judging consciousness, then all that pragmatism asserts is, indeed, as far as it goes, valid; but a pure pragmatist is nevertheless self-refuting. We must be pragmatists, but also more than pragmatists. For if I need what is not my present self, if I need another than the present judging consciousness, in order to make it possible for me to assert the truth of my judgment, then, although my predicates are, as pragmatism asserts, the constructions of the present moment, still the truth of my judgment is not a mere construction of the present moment, but belongs to the unity of the various constructive processes of momentary selves, all of which are various expressions of the purpose which each one of them shares, so that, despite their variety, their selfhood is one.

Yet with this result we cannot pause. Our account is still incomplete. The assertion: "My judgment is true," amounts so far to the judgment: "I have companions, other selves who view the same object from other points of view, – but who, as others, are still so one with myself that despite their variety they still *ought* to agree with me, since my *ought* is theirs, and since we are but various functions in the unity of one knowing process." All this implies the notion of the *ought*, a notion without the consciousness of which my present judgment, as we have seen, becomes even for myself, in case I reflect, a vain crooning, a mere wrinkling of the countenance, an empty pounding of my desk, a helpless shouting at nobody and about nothing. But this ought, what can it mean? A realist would say: "It means that if you judge falsely about the independent object, the independent object will perchance eliminate you as

an unfit variation from the evolutionary process, or will in any case catch you and hold you to facts, squirm though you may." This realistic view, so far as it is sound at all, obviously denies the very independence which it pretends to attribute to the object. Nothing can refute me but an experience that is in unity with my own, and that is a function of the very selfhood which is expressed in me. So realism must be translated into conscious, and so, apparently, into directly pragmatic terms. Plainly the *ought* means that my judging activity has a purpose that goes beyond my present partial expression. In other words, my present judging activity has a place in a process of experience such that if my judgment, despite its present success, still on the whole and in the end fails, this process, of which the judgment itself is a part, contains somewhere conscious contents which will show my partial failure. But since no self whose purposes are foreign to mine, or are in any way such as not to include mine, can possibly observe my failure in judgment, or can be conscious of what I mean and how and where I fail of my own purpose, it follows that to say: "I *ought* to judge thus or thus" is to say: "I myself; in a more fully enlightened expression of myself, am so constituted as to detect whether my judgment wholly fulfills or only partially fulfills my purpose." But to say: "We companions, who judge together the same object, we are all subject to the same ought," is therefore to say: "All our various selves are functions not only one of another, but of one conscious Self that somewhere and somehow pragmatically constructs an expression of itself in the light of which our various partial expressions are judged." Such a self I need just in so far as I need my judgment to be true. Such a self is real if my judgment has either truth or falsity.

But now, regarding any grade or type of socially communing selves that might have reached, from various points of view, such judgments regarding their common objects as rightly expressed so much of their *ought* as had yet come to their own consciousness, the same question that we have now repeatedly asked about our present selves would arise afresh. You do not escape the needs which pragmatism feels by merely multiplying the judges, while leaving them all finite. Is their view of the *ought* the view that they *ought* to hold? Are their conscious ways of judging this object only the expression of their social, but still relative, temporary, passing, unstable point of view? Mere multiplicity of opinions alters not in kind the difficulty that first arose in our path as we studied the single momentary judgment. I appeal to my companions to confirm my judgment in case I believe my judgment to be true. If they disagree, I appeal to our common *ought*, that is, to our consciousness of our one selfhood. But even if my companions all agree with me, and even if we all believe together that we ought to agree, we shall no sooner see this to be our common pragmatic attitude towards our experience than we shall need, in order to maintain that our common judgment is actually true, to face the further question "Is there possibly any other point of view than ours

regarding this object, – and one which renders ours in any sense false? Is there any ought that a still more inclusive view of our common purpose would see to be still higher than our ought?" If there is, then our common judgment is merely our present reaction, which is not true even of its own object. We shall need, I say, need in the pragmatic sense, to seek for the answer to these questions. The penalty of not being able to answer them will simply be that we shall have to call our intellectual constructions, so far as we shall then have reached them, mere attitudes of ours, and not any genuine truths at all. For truth is conformity to an ought. And a true ought is one that from every point of view confirms or refutes. Are such questions in themselves answerable? Does the real world contain anywhere the experiences that do answer them? Is there any final ought of judgment at all? Upon this question depends the whole issue as to whether you and I ever make any true judgments at all, or for that matter, whether we make any false judgments. Truth and falsity are indeed relative to insight, to experience, to life, to action, to the constructions which pragmatism emphasizes. But unless these constructions are what they ought to be they are not true. And unless there is an objective *ought* they are not even false. But if there is a true and a false, then there is a view for which the ought is known, – known not as simply a single, transient, unstable, chance point of view, but as the object of one self-possessed and inclusive insight such that it *remains invariant whatever other points of view you attempt to conceive added to it*. Such an insight would belong to a self that did not fail to include pragmatisms of all kinds, but that simply and consciously *included them all*, in such wise that if you conceived other points of view, other reactions to situations, other judgments added, no change would result in the characterizations of its object which this self could view as fitting, permissible, and so true. For the ought is either a real ought or it is nothing. A judgment has its place in a complete system of truth, or else it is not true.

Now when we declare that our judgments are true, we appeal to such a self to confirm them. Of such an appeal our desire for social support and comradeship is merely a special instance, a fragmentary example. When we doubt whether our judgments are true, we doubt whether such a self does confirm them. When we need to call our judgments true or false, we need to conceive, to define, to address, such a self. If there is such a self, then there is truth. If there is no such self, pragmatism can truly assert nothing, can truly deny nothing, stands in the presence of no genuine reality, and can only continue to be conscious of how it wrinkles its wholly unreal countenance in the echoless void, where its assertions meet no genuine response, have not even any real spectators, and are meaningless both to God and to man, since then neither man nor God exists to fill the void.

But if there is such a self, then for every finite instance of life pragmatism remains a perfectly genuine truth, – genuine as our ceaseless longing for the eternal is genuine, – genuine as love and aspiration are genuine. Everything

expresses itself according to its momentary light. Everything finite passes, changes, evolves, asserts itself and resigns itself, utters rules that are sincerely meant to be authoritative, but gives way to the authority of its own higher expression. Everything is practical; and everything seeks nothing whatever but its own true self, which is the Eternal.

For the Eternal is not that which merely lasts all the time. Only abstractions temporally endure. And they are not the life; they are either only a dead image, or again, they are only an aspect of the life. That alone is eternal which includes all the varying points of view in the unity of a single insight, and which knows that it includes them, because every possible additional point of view would necessarily leave this insight invariant.

The possibility of such an eternal is, of course, the possibility of the existence, in a genuine sense together, as a *toturn simul*, of the contents of an infinite series of practical and evolutionary processes. I have elsewhere set forth at length my grounds for believing both in the possibility and in the actuality of such an eternal existence. It is not my purpose, in this address, however, to expound a metaphysical theory for its own sake. I have desired merely to indicate what we need when we attempt to make true assertions.

I conclude, then, First: That pragmatism is right in asserting that every judgment, whatever else it may prove to be, is the expression of a present activity, determined by a consciousness of need, is responsive to this need, and is such as this need determines, – in brief; is a constructive response to a situation, and is not a mere copying of an externally given object.

Secondly: That nevertheless, in so far as we ourselves observe that our present judgment has *only* this character of being our present and passing response to a given situation, we find that we need the judgment to be more than this. This need is the peculiar need that our judgment should be not only ours but true.

Thirdly: That this need for truth is the need that there should be other points of view, other actual judgments, responsive to the same situation, in other words, to the same object. These other points of view we first conceive as belonging to ourselves at other times, or to other selves, those of our companions. We conceive that all these judgments ought, despite their diversity of points of view, so to agree as to confirm one another, and so to unite in one system of truth as to characterize harmoniously the same object.

Fourthly: That these various points of view (in order thus to harmonize) and this *ought* (in order to hold for all of them) must be conceived as belonging to, and as being included within, a single self, whose partial functions these various selves are, and whose common conscious purpose defines the ought to which each of the various judgments is to conform. Such a self we need to conceive in order to conceive our judgments as true; and we need to conceive it as having the same sort of embodiment in concrete experience that our present judgment now has.

Fifthly: Meanwhile, in so far as we conceive this self as like ourselves transient, passing, variable, – its inclusive constructive judgments become once more like our own, not genuinely true, but only special points of view, which determine no genuine ought, and which are mere states of mind, or stages of its experience. Mere magnitude and multiplicity cannot constitute that aspect of consciousness which makes possible a genuine *ought*.

Accordingly, in the sixth place, in order to conceive our judgments as true, we need to conceive them as partial functions of a self which is so inclusive of all possible points of view regarding our object as to remain invariant in the presence of all conceivable additional points of view, and so conscious of its own finished and invariable purpose as to define an ought that determines the truth or falsity of every possible judgment about this object.

Seventhly, and lastly: If there is such an inclusive and invariant self, it is of course complete at no moment of time. It is inclusive of all temporal processes of evolution that could alter our view or any view of our object. Such a self is invariant and eternal, without thereby ceasing at any and every point of time to be expressed in finite and practical activities, such as appear in our own judgments. If there is such a self, our need to make judgments that can be true or false is satisfied. If there is no such self, no judgment is either true or false. The need for the Eternal is consequently one of the deepest of all our practical needs. Herein lies at once the justification of pragmatism, and the logical impossibility of pure pragmatism. Everything finite and temporal is practical. All that is practical borrows its truth from the Eternal.

LOYALTY, TRUTH, AND REALITY

"Loyalty, Truth, and Reality." *The Philosophy of Loyalty* (New York: Macmillan, 1908), chap. 7, pp. 301–348.

In closing my last lecture I said that what ever trains us in the arts of loyalty enables us to enter into a world of spiritual truth. These words were intended to indicate that the loyal life has another aspect than the one hitherto most emphasized in these lectures. Our foregoing account has been deliberately one-sided. We have been discussing the moral life as if one could define a plan of conduct without implying more about man's place in the real universe than we have yet made explicit in these lectures. Hence our discussion, so far, is open to obvious objections.

For, in talking about the good of loyalty, we have indeed appealed to human experience to show us wherein that good consists. But our very appeal also showed us that loyalty is good for a man precisely because he believes that his cause itself, even apart from his service, is good, and that both his cause and its goodness are realities, founded in facts which far transcend his individual life and his personal experience. Now, one may well doubt whether this belief of a loyal man is, in any individual case, a well-founded belief. And if it is not well founded, one may well question whether the loyal man's good is not, after all, an illusory good, which will vanish from his experience as soon as he becomes enlightened. Since any instance of loyalty is subject to this sceptical inquiry, one may doubt whether even what we have called the supreme cause, that of loyalty to loyalty, is a good cause. For any or all loyalties may be founded in illusion, and then it would be an illusion that the fostering of loyalty amongst men is a finally worthy undertaking.

I

Objections of this sort are best stated by those to whom they actually occur as serious difficulties regarding the discussions contained in the foregoing lectures. A dear friend of mine, without receiving any instigation from me to help me by such an act, has so aptly summed up the objections here in question, that I can best show you precisely where we now stand by reading to you a portion of a letter which he has written to me, after hearing the first portion of my account of the good of loyalty.

"Loyalty to loyalty," writes my friend, "doesn't seem ultimate. Is it not loyalty to all *objects* of true loyalty that is our ultimate duty? The object, not the relation, – the universe and the devotion to it, not the devotion alone, is the object of our ultimate devotion.... Is it not the glory of this goal that lends dignity to all loyal search, – our own or that of others? It is because of this goal that we cheer on all to pursue it.... It is because of what we believe about the end of the various loyalties that we are so glad of all the loyalties which make it possible to attain that end. The port gives value to the courses steering for it.... Except for our knowledge of the value of their destination, and of all life lived in quest of that destination, should we be anxious to urge all seekers along their courses? ... Loyalty is a relation.... Can we be loyal to anything, ultimately, except the universe which is the object of all love and all knowledge?"

So far my friend's statement of his difficulty. As you will see, from these two closing lectures of my course which still remain, I cordially share my friend's objection to the definition of loyalty so far insisted upon in these lectures. Our definition of loyalty, and of its relation to the ultimate good which the loyal are seeking, has so far been inadequate. But, as I told you in the opening lecture, we deliberately began with an inadequate definition of the nature of loyalty. We were obliged to do so. I expressly said this in my opening statement. Why we were obliged to do so, and why, thus far in these lectures, we have confined ourselves to developing and to illustrating the consequences of this imperfect definition of loyalty, our closing lectures will of themselves, I hope, make clear. A similar difficulty can be urged against any mere moralism, that is, against any purely ethical theory of the moral life. One wants a doctrine of the real world, or a religion, to help out one's ethics. For, as I have replied to my friend, morality, viewed by itself, has a character that can well be suggested by the parable of the talents. The moral life, regarded simply as the moral life, is the service of a master who seems, to those who serve him, to have gone away into a far country. His servants have faith in him, but the service of his cause always has, for the moral, a certain mystery about it. They can indeed become sure, apart from any solution of this mystery, that their own supreme personal good lies in serving their lord. For not otherwise can they find even the relative peace that lies in a service of duty. But those who serve are not thus altogether secured against a pessimism regarding the whole outcome of human endeavor. For if loyalty is indeed our best, may not even this best itself be a failure?

Or, to use further the similitude of the parable of the talents: It may be indeed our supreme good to serve the master who has gone into the far country. Yet we do not merely want to serve him; we want, like Job, to meet him face to face. Suppose that we should discover the master to be indeed unworthy or a phantom or a deceiver, would even this, our best good, the service of his cause, seem permanently valuable? Should we not say, some day:

To serve him was our best chance of life; but after all even that service was vanity.

In any case, our loyalty implies a faith in the master, – an assurance that life, at its best, is indeed worth while. Our philosophy of loyalty must therefore include an attempt to see the master of life himself, and to find out whether in truth he is, what our loyalty implies that he is, a master worth serving.

To sum up: So far we have defined the moral life as loyalty, and have shown why the moral life is for us men the best life. But now we want to know what truth is behind and beneath the moral life. With my friendly correspondent, we want to see the relation of loyalty to the real universe.

II

What must be true about the universe if even loyalty itself is a genuine good, and not a merely inevitable human illusion?

Well, loyalty is a service of causes. A cause, if it really is what our definition requires, links various human lives into the unity of one life. Therefore, if loyalty has any basis in truth, human lives can be linked in some genuine spiritual unity. Is such unity a fact, or is our belief in our causes a mere point of view, a pathetic fallacy? Surely, if any man, however loyal, discovers that his cause is a dream, and that men remain as a fact sundered beings, not really linked by genuine spiritual ties, how can that man remain loyal? Perhaps his supreme good indeed lies in believing that such unities are real. But if this belief turns out to be an illusion, and if a man detects the illusion, can he any longer get the good out of loyalty?

And as for even this personal good that is to be got out of loyalty, we have all along seen that such good comes to a loyal man's mind in a very paradoxical way. A loyal man gets good, but since he gets it by believing that his cause has a real existence outside of his private self, and is of itself a good thing, he gets the fascination of loyalty not as a private delight of his own, but as a fulfilment of himself through self-surrender to an externally existing good, – through a willing abandonment of the seeking of his own delight. And so the loyal man's good is essentially an anticipation of a good that he regards as not his own, but as existent in the cause. The cause, however, is itself no one fellow-man, and no mere collection of fellowmen. It is a family, a country, a church, or is such a rational union of many human minds and wills as we have in mind when we speak of a science or an art. Now, can such causes contain any good which is not simply a collection of separate human experiences of pleasure or of satisfaction? Thus, then, both the reality and the good of a loyal man's cause must be objects of the loyal man's belief in order that he should be able to get the experience of loyalty. And if his loyalty is indeed well founded, there must be unities of spiritual life in the universe such

that no one man ever, by himself, experiences these unities as facts of his own consciousness. And these higher unities of life must possess a degree and a type of goodness, – a genuine value, such that no one man, and no mere collection of men, can ever exhaustively experience this goodness, or become personally possessed of this value.

How paradoxical a world, then, must the real world be, if the faith of the loyal is indeed well founded! A spiritual unity of life, which transcends the individual experience of any man, must be real. For loyalty, as we have seen, is a service of causes that, from the human point of view, appear superpersonal. Loyalty holds these unities to be good. If loyalty is right, the real goodness of these causes is never completely manifested to any one man, or to any mere collection of men. Such goodness, then, if completely experienced at all, must be experienced upon some higher level of consciousness than any one human being ever reaches. If loyalty is right, social causes, social organizations, friendships, families, countries, yes, humanity, as you see, must have the sort of unity of consciousness which individual human persons fragmentarily get, but must have this unity upon a higher level than that of our ordinary human individuality.

Some such view, I say, must be held if we are to regard loyalty as in the end anything more than a convenient illusion. Loyalty has its metaphysical aspect. It is an effort to conceive human life in an essentially superhuman way, to view our social organizations as actual personal unities of consciousness, unities wherein there exists an actual experience of that good which, in our loyalty, we only partially apprehend. If the loyalty of the lovers is indeed well founded in fact, then they, as separate individuals, do not constitute the whole truth. Their spiritual union also has a personal, a conscious existence, upon a higher than human level. An analogous unity of consciousness, an unity superhuman in grade, but intimately bound up with, and inclusive of, our apparently separate personalities, must exist, if loyalty is well founded, wherever a real cause wins the true devotion of ourselves. Grant such an hypothesis, and then loyalty becomes no pathetic serving of a myth. The good which our causes possess, then, also becomes a concrete fact for an experience of a higher than human level. That union of self-sacrifice with self-assertion which loyalty expresses becomes a consciousness of our genuine relations to a higher social unity of consciousness in which we all have our being. For from this point of view we are, and we have our worth, by virtue of our relation to a consciousness of a type superior to the human type. And meanwhile the good of our loyalty is itself a perfectly concrete good, a good which is present to that higher experience, wherein our cause is viewed in its truth, as a genuine unity of life. And because of this fact we can straightforwardly say: We are loyal not for the sake of the good that we privately get out of loyalty, but for the sake of the good that the cause – this higher unity of experience – gets out of this loyalty. Yet our loyalty gives us what is, after all, our

supreme good, for it defines our true position in the world of that social will wherein we live and move and have our being.

I doubt not that such a view of human life, – such an assertion that the social will is a concrete entity, just as real as we are, and of still a higher grade of reality than ourselves, – will seem to many of you mythical enough. Yet thus to view the unity of human life is, after all, a common tendency of the loyal. That fact I have illustrated in every lecture of this course. That such a view need not be mythical, that truth and reality can be conceived only in such terms as these, that our philosophy of loyalty is a rational part of a philosophy which must view the whole world as one unity of consciousness, wherein countless lesser unities are synthesized, – this is a general philosophical thesis which I must next briefly expound to you.

III

My exposition, as you see, must be, in any case, an attempt to show that the inevitable faith of the loyal – their faith in their causes, and in the real goodness of their causes – has truth, and since I must thus, in any case, discourse of truth, I propose briefly to show you that whoever talks of any sort of truth whatever, be that truth moral or scientific, the truth of common sense or the truth of a philosophy, inevitably implies, in all his assertions about truth, that the world of truth of which he speaks is a world possessing a rational and spiritual unity, is a conscious world of experience, whose type of consciousness is higher in its level than is the type of our human minds, but whose life is such that our life belongs as part to this living whole. This world of truth is the one that you must define, so I insist, if you are to regard any proposition whatever as true, and are then to tell, in a reasonable way, what you mean by the truth of that proposition.

The world of truth is therefore essentially a world such as that in whose reality the loyal believe when they believe their cause to be real. Moreover, this truth world has a goodness about it, essentially like that which the loyal attribute to their causes. Truth seeking and loyalty are therefore essentially the same process of life merely viewed in two different aspects. Whoever is loyal serves what he takes to be a truth, namely, his cause. On the other hand, whoever seeks truth for its own sake fails of his business if he seeks it merely as a barren abstraction, that has no life in it. If a truth seeker knows his business, he is, then, in the sense of our definition, serving a cause which unifies our human life upon some higher level of spiritual being than the present human level. He is therefore essentially loyal. Truth seeking is a moral activity; and on the other hand, morality is wholly inadequate unless the light of eternal truth shines upon it.

This, I say, will be my thesis. Some of you will call it very mystical, or at least a very fantastic thesis. It is not so. It ought to be viewed as a matter of

plain sense. It is, I admit, a thesis which many of the most distinguished amongst my colleagues, who are philosophers, nowadays view sometimes with amusement, and sometimes with a notable impatience. This way of regarding the world of truth, which I have just defined as mine, is especially and most vivaciously attacked by my good friends, the pragmatists, – a group of philosophers who have of late been disposed to take truth under their especial protection, as if she were in danger from the tendency of some people who take her too seriously.

When I mention pragmatism, I inevitably bring to your minds the name of one whom we all honor, – the philosopher who last year so persuasively stated, before the audience of this Institute, the pragmatist theory of philosophical method, and of the nature of truth. It is impossible for me to do any justice, within my limits, to the exposition which Professor James gave of his own theory of truth. Yet since the antithesis between his views and those which I have now to indicate to you may be in itself an aid to my own exposition, I beg you to allow me to use, for the moment, some of his assertions about the nature of truth as a means of showing, by contrast, how I find myself obliged to interpret the same problem. The contrast is accompanied, after all, by so much of deeper agreement that I can well hope that my sketch of the current situation in the philosophical controversies about truth may not seem to you merely a dreary report of differences of opinion.

Professor James, in discussing the nature of truth, in his recent book on pragmatism, begins, as some of you will remember, by accepting the classic definition of truth as the agreement of our ideas with reality. Whoever knows or possesses a truth has, then, in his mind, an idea, an opinion, a judgment, or some complex of such states of mind. If his views are true, then these his ideas or opinions are in agreement with something called reality. Thus, for instance, if a loyal man believes his cause, say, his friendship or his club or his nation, to be a reality, and if his belief is true, his loyal opinion is in agreement with the real world. So far, of course, all of you will accept the definition of truth here in question.

Professor James now goes on to point out that, in some cases, our ideas agree with what we call real things by copying those things. So, if, with shut eyes, you think of the clock on the wall, your image of the clock is a copy of its dial. But, as my colleague continues, our power to copy real objects by ideas of our own is obviously a very limited power. You believe that you have at least some true ideas about many objects which are far too complex or too mysterious for you to copy them. Your power to become sure that your ideas do copy the constitution of anything whatever which exists outside of you is also very limited, because, after all, you never get outside of your own experience to see what the real things would be if taken wholly in themselves. Hence, on the whole, one cannot say that the agreement of our ideas with reality which constitutes their truth is essentially such as to demand that our

ideas should be copies. For we believe that we have true ideas even when we do not believe them to be copies.

Moreover (and herewith we approach a consideration which is, for my colleague's theory of truth very essential), not only does truth not consist merely in copying facts; but also truth cannot be defined in terms of any other static or fixed relation between ideas and facts. The only way to conceive that agreement between ideas and facts which constitutes truth is to think of the "practical consequences" which follow from possessing true ideas. "True ideas," in Professor James's words, "lead us, namely, through the acts and other ideas which they instigate, into or up to or towards other parts of experience with which we feel all the while that the original ideas remain in agreement. The connections and transitions come to us, from point to point, as being progressive, harmonious, satisfactory. This function of agreeable leading is what we mean by an idea's verification." So far my colleague's words. He goes on, in his account, to mention many illustrations of the way in which the truth of ideas is tested, both in the world of common sense, and in the world of science, by the usefulness, by the success, which attaches to the following out of true ideas to their actual empirical consequences. The wanderer lost in the woods gets true ideas about his whereabouts whenever he hits upon experiences and ideas which set him following the path which actually leads him home. In science, hypotheses are tested as to their truth, by considering what experiences they lead us to anticipate, and by then seeing whether these anticipations can be fulfilled in a satisfactory way. "True," says Professor James, "is the name for whatever idea starts the verification process." For instance, then, the verifiable scientific hypothesis, if once tested by the success of its results in experience, is in so far declared true. And similarly, the idea of following a given path in the woods in order to get home is declared true, if you follow the path and get home.

In consequence, every true idea is such in so far as it is useful in enabling you to anticipate the sort of experience that you want; and every idea that is useful as a guide of life is in so far true. The personal tests of usefulness, as of truth, are for every one of us personal and empirical. My own direct tests of truth are of course thus limited to my own experience. I find my own ideas true just in so far as I find them guiding me to the experience that I want to get. But of course, as my colleague constantly insists, we give credit, as social beings, to one another's verifications. Hence I regard as true many ideas that I personally have not followed out to any adequately experienced consequences. The "overwhelmingly large" number of the ideas by which we live, "we let pass for true with out attempting to verify." We do this, says Professor James, "because it *works* to do so, everything we know conspiring with the belief, and nothing interfering." That is, we regard as true those ideas which we personally find it convenient, successful, expedient to treat as verifiable, even though we never verify them. The warrant of these unverifiable truths

is, however, once more, the empirical usefulness of living as if they were verifiable. "Truth lives," says Professor James, "for the most part on a credit system.... But this all points to direct face-to-face verification somewhere, without which the fabric of truth collapses like a financial system with no cash basis whatever. You accept my verification of one thing, I yours of another. We trade on each other's truth. But beliefs verified concretely by *somebody* are the posts of the whole superstructure." The indirectly verifiable ideas, that is, the ideas which somebody else verifies, or even those which nobody yet verifies, but which agree sufficiently with verified ideas, we accept because it is advantageous to accept them. It is the same thing, then, to say that an idea is true because it is useful and to say that it is useful because it is true.

Agreement with reality thus turns out, as my colleague insists, "to be an affair of leading, – leading that is useful because it is into quarters that contain objects that are important." And my colleague's account of truth culminates in these notable expressions: "'The true', to put it very briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving." "Pragmatism faces forward towards the future." That is, an idea is true by virtue of its expedient outcome. "It pays for our ideas to be validated, verified. Our obligation to seek truth is part of our general obligation to do what pays. The payment true ideas bring are the sole why of our duty to follow them."

The sum and substance of this theory of truth, as you see, is that the truth of an idea is determined by its "success" in yielding what my colleague frequently calls "the cash values in terms of experience," which appear as consequences of holding this idea. These values may either take the form of direct verifications in terms of sensible facts, as when one finds one's way out of the woods and sees one's home; or else the form of practically satisfying and expedient beliefs, which clash with no sensible experience, and which are personally acceptable to those who hold them. It is "expedient" to connect the latter beliefs with sensible cash values when you can. If you cannot turn them into such cash, you are at liberty to hold them, but with the conviction that, after all, the personally expedient is the true.

In any case, as you see, whatever else truth is, it is nothing static. It changes with the expediencies of your experience. And therefore those who conceive the realm of truth as essentially eternal are the objects of my colleague's most charming philosophical fury.

IV

We have, then, an authoritative exposition of pragmatism before us. You must see that this doctrine, whether it be a true doctrine, or whether it be indeed simply for some people an expedient doctrine, is certainly one that concerns our philosophy of loyalty, now that indeed we have reached the place where

the relation between loyalty and truth has become, for us, a critically important relation. May we venture to ask ourselves, then: Is this pragmatism a fair expression of what we mean by truth?

In reply let me at once point out the extent to which I personally agree with my colleague, and accept his theory of truth. I fully agree with him that whenever a man asserts a truth, his assertion is a deed, – a practical attitude, an active acknowledgment of some fact. I fully agree that the effort to verify this acknowledgment by one's own personal experience, and the attempt to find truth in the form of a practical congruity between our assertions and our attained empirical results, is an effort which in our individual lives inevitably accompanies and sustains our every undertaking in the cause of truth seeking. Modern pragmatism is not indeed as original as it seems to suppose itself to be in emphasizing such views. The whole history of modern idealism is full of such assertions. I myself, as a teacher of philosophy, have for years insisted upon viewing truth in this practical way. I must joyously confess to you that I was first taught to view the nature of truth in this way when I was a young student of philosophy; and I was taught this by several great masters of modern thought. These masters were Kant, Fichte, Hegel, and Professor James himself, whose lectures, as I heard them in my youth at the Johns Hopkins University, and whose beautiful conversations and letters in later years, inspired me with an insight that helped me, rather against his own advice, to read my German idealists aright, and to see what is, after all, the eternal truth beneath all this pragmatism. For Professor James's pragmatism, despite its entertaining expressions of horror of the eternal, actually does state one aspect of eternal truth. It is, namely, eternally true that all search for truth is a practical activity, with an ethical purpose, and that a purely theoretical truth, such as should guide no significant active process, is a barren absurdity. This, however, is so far precisely what Fichte spent his life in teaching. Professor James taught me, as a student, much the same lesson; and I equally prize and honor all of my masters for that lesson; and I have been trying to live up to it ever since I first began to study the nature of truth.

So far, then, I am a pragmatist. And I also fully agree that, if we ever get truth, the attainment of truth means a living and practical success in those active undertakings in terms of which we have been trying to assert and to verify our truth. I doubt not that to say, "This is true," is the same as to say: "The ideas by means of which I define this truth are the practically and genuinely successful ideas, the ideas such that, when I follow them, I really fulfil my deepest needs." All this I not only admit; but I earnestly insist that truth is an ethical concept; and I thank from my heart the great pragmatist who so fascinated his audience last year in this place; I thank him that he taught them what, in my youth, he helped to teach me, namely, that winning the truth means winning the success which we need, and for which the whole

practical nature of our common humanity continually groans and travails together in pain until now.

And yet, and yet all this still leaves open one great question. When we seek truth, we indeed seek successful ideas. But what, in Heaven's name, constitutes success? Truth-seeking is indeed a practical endeavor. But what, in the name of all the loyal, is the goal of human endeavor? Truth is a living thing. We want leading and guidance. "Lead, kindly light," – thus we address the truth. We are lost in the woods of time. We want the way, the truth, and the life. For nothing else does all our science and our common sense strive. But what is it to have genuine abundance of life? For what do we live?

V

Here our entire philosophy of loyalty, so far as it has yet been developed, comes to our aid. The loyal, as we have said, are the only human beings who can have any reasonable hope of genuine success. If they do not succeed, then nobody succeeds. And of course the loyal do indeed live with a constant, although not with an exclusive, reference to their own personal experience and to that of other individual men. They feel their present fascination for their cause. It thrills through them. Their loyalty has, even for them, in their individual capacity what Professor James calls a cash value. And of course they like to have their friends share such cash values. Yet I ask you: Are the loyal seeking *only* the mere collection of their private experiences of their personal thrills of fascination? If you hear loyal men say: "We are in this business just for what we as individuals – we and our individual fellows – can get out of it," do you regard that way of speech as an adequate expression of their really loyal spirit? When Arnold von Winkelried rushed on the Austrian spears, did he naturally say: "Look you, my friends, I seek, in experiential terms, the cash value of my devotion; see me draw the cash." My colleague would of course retort that the hero in question, according to the legend, said, as he died: "Make way for liberty." He therefore wanted liberty, as one may insist, to get these cash values. Yes, but liberty was no individual man, and no mere heap of individual men. Liberty was a cause, a certain superhuman unity of the ideal life of a free community. It was indeed expedient that one man should die for the people. But the people also was an *unio mystica* of many in one. For that cause the hero died. And no man has ever yet experienced, in his private and individual life, the whole true cash value of that higher unity. Nor will all the individual Swiss patriots, past, present, or future, viewed as a mere collection of creatures of a day, ever draw the cash in question. If the cause exists, the treasure exists, and is indeed a cash value upon a level higher than that of our passing human life. But loyalty does not live by selling its goods for present cash in the temple of its cause. Such pragmatism

it drives out of the temple. It serves, and worships, and says to the cause: "Be thine the glory."

Loyalty, then, seeks success and from moment to moment indeed thrills with a purely fragmentary and temporary joy in its love of its service. But the joy depends on a belief in a distinctly superhuman type of unity of life. And so you indeed cannot express the value of your loyalty by pointing at the mere heap of the joyous thrills of the various loyal individuals. The loyal serve a real whole of life, an experiential value too rich for any expression in merely momentary terms.

Now, is it not very much so with our love of any kind of truth? Of course, we mortals seek for whatever verification of our truths we can get in the form of present success. But can you express our human definition of truth in terms of any collection of our human experiences of personal expediency?

Well, as to our concept of truth, let us consider a test case by way of helping ourselves to answer this question. Let us suppose that a witness appears, upon some witness-stand, and objects to taking the ordinary oath, because he has conscientious scruples, due to the fact that he is a recent pragmatist, who has a fine new definition of truth, in terms of which alone he can be sworn. Let us suppose him, hereupon, to be granted entire liberty to express his oath in his own way. Let him accordingly say, using, with technical scrupulosity, my colleague's definition of truth: "I promise to tell whatever is expedient and nothing but what is expedient, so help me future experience." I ask you: Do you think that this witness has expressed, with adequacy, that view of the nature of truth that you really wish a witness to have in mind? Of course, if he were a typical pragmatist, you would indeed be delighted to hear his testimony on the witness-stand or anywhere else. But would you accept his formula?

But let me be more precise as to the topic of this witness's possible testimony. I will use for the purpose Kant's famous case. Somebody, now dead, let us suppose, has actually left with the witness a sum of money as a wholly secret deposit to be some time returned. No written record was made of the transaction. No evidence exists that can in future be used to refute the witness if he denies the transaction and keeps the money. The questions to be asked of the witness relate, amongst other things, to whatever it may be that he believes himself to know about the estate of the deceased. I now ask, not what his duty is, but simply what it is that he rationally means to do in case he really intends to tell the truth about that deposit. Does he take merely the "forward-looking" attitude of my colleague's pragmatism? Does he mean merely to predict, as expedient, certain consequences which he expects to result either to himself or to the heirs of the estate? Of course his testimony will have consequences. But is it these which he is trying to predict? Are they his true object? Or does the truth of his statement mean the same as the expediency, either to himself or to the heirs, of any consequences whatever

which may follow from his statement? Does the truth of his statement about the deposit even mean the merely present empirical fact that he now feels a belief in this statement or that he finds it just now congruent with the empirical sequences of his present memories? No, for the witness is not trying merely to tell how he feels. He is trying to tell the truth about the deposit. And the witness's belief is not the truth of his belief. Even his memory is not the truth to which he means to be a witness. And the future consequences of his making a true statement are for the witness irrelevant, since they are for the law and the heirs to determine. Yet one means something perfectly definite by the truth of the testimony of that witness. And that truth is simply inexpressible in such terms as those which my colleague employs. Yet the truth here in question is a simple truth about the witness's own personal past experience.

Now, such a case is only one of countless cases where we are trying to tell the truth about something which we all regard as being, in itself, a matter of genuine and concrete experience, while nevertheless we do not mean, "It is expedient just now for me to think this," nor yet, "I predict such and such consequences for my own personal experience, or for the future experience of some other individual man; and these predicted consequences constitute the truth of my present assertion." I say there are countless such cases where the truth that we mean is empirical indeed, but transcends all such expediencies and personal consequences. The very assertion, "Human experience, taken as a totality of facts, exists," is a momentous example of just such an assertion. We all believe that assertion. If that assertion is not actually true, then our whole frame of natural science, founded as it is on the common experience of many observers, crumbles into dust, our common sense world is nothing, business and society are alike illusions, loyalty to causes is meaningless. Now that assertion, "Human experience, that is, the totality of the experiences of many men, really exists," is an assertion which you and I regard as perfectly true. Yet no individual man ever has verified, or ever will verify, that assertion. For no man, taken as this individual man, experiences the experience of anybody but himself. Yet we all regard that assertion as true.

My colleague, of course, would say, as in fact he has often said, that his assertion is one of the numerous instances of that process of trading on credit which he so freely illustrates. We do not verify this assertion. But we accept it on credit as verifiable. However, the credit simile is a dangerous one here, so long as one conceives that the verification which would pay the cash would be a payment in the form of such human experience as you and I possess. For the assertion, "The experience of many men exists," is an assertion that is essentially unverifiable by any one man. If the "cash value" of the assertion means, then, its verifiability by any man, then the credit in question is one that simply cannot be turned into such cash by any conceivable process, occurring in our individual lives, since the very idea of the real

existence of the experience of many men excludes, by its definition, the direct presence of this experience of various men within the experience of any one of these men. The credit value in question would thus be a *mere* fiat value, so long as the only cash values are those of the experiences of individual men, and the truth of our assertion would mean simply that we find it expedient to treat as verifiable what we know cannot be verified.

Hereupon, of course, we should simply be trading upon currency that has no cash value. Whoever does verify the fact that the experience of many men exists, if such a verifier there be, is a superhuman being, an union of the empirical lives of many men in the complex of a single experience. And if our credit of the assertion that many men exist is convertible into cash at all, that cash is not laid up where the moth and rust of our private human experience doth from moment to moment corrupt the very data that we see; but is laid up in a realm where our experiences, past, present, future, are the object of a conspectus that is not merely temporal and transient. Now all the natural sciences make use of the persuasion that the experiences of various men exist, and that there is a unity of such experiences. This thesis, then, is no invention of philosophers.

My colleague, in answer, would of course insist that as a fact you and I are now believing that many men exist, and that human experience in its entirety exists, *merely* because, in the long run, we find that this belief is indeed congruous with our current and purely personal experience, and is therefore an expedient idea of ours. But I, in answer, insist that common sense well feels this belief to be indeed from moment to moment expedient, and yet clearly distinguishes between that expediency and the truth which common sense all the while attributes to the belief. The distinction is precisely the one which my fancied illustration of the pragmatist on the witness-stand has suggested. It is a perfectly universal distinction and a commonplace one. Tell me, "This opinion is true," and whatever you are talking about I may agree or disagree or doubt; yet in any case you have stated a momentous issue. But tell me, "I just now find this belief expedient, it feels to me congruous" and you have explicitly given me just a scrap of your personal biography, and have told me no other truth whatever than a truth about the present state of your feelings.

If, however, you emphasize my colleague's wording to the effect that a truth is such because it proves to be an idea that is expedient "in the long run," I once more ask you: *When* does a man experience the whole of the real facts about the "long run"? At the beginning of the long run, when the end is not yet, or at the end, when, perhaps, he forgets, like many older men, what were once the expediencies of his youth? What decides the truth about the long run? My exalted moments, when anything that I like seems true, or my disappointed moments, when I declare that I have always had bad luck? To appeal to the genuinely real "long run" is only to appeal in still another form to a certain ideally fair conspectus of my own whole life, – a conspectus which I,

in my private human experience, never get. Whoever gets the conspectus of my whole life, to see what, in the long run, is indeed for me expedient, – whoever, I say, gets that conspectus, if such a being there indeed is, – is essentially superhuman in his type of consciousness. For he sees what I only get in the form of an idea; namely, the true sense and meaning of my life.

In vain, then, does one try adequately to define the whole of what we mean by truth either in terms of our human feelings of expediency or in terms of our instantaneous thrills of joy in success, or in terms of any other verifications that crumble as the instant flies. All such verifications we use, just as we use whatever perishes. Any such object is a fragment, but we want the whole. Truth is itself a cause, and is largely as one must admit, for us mortals, just now, what we called, in our last lecture, a lost cause – else how should these pragmatists be able thus to imagine a vain thing, and call that truth which is but the crumbling expediency of the moment? Our search for truth is indeed a practical process. The attainment of truth means success. Our verifications, so far as we ever get them, are momentary fragments of that success. But the genuine success that we demand is an ethical success, of precisely the type which all the loyal seek, when they rejoice in giving all for their cause.

VI

But you will now all the more eagerly demand in what sense we can ever get any warrant for saying that we know any truth whatever. In seeking truth we do not seek the mere crumbling successes of the passing instants of human life. We seek a city out of sight. What we get of success within our passing experience is rationally as precious to us as it is, just because we believe that attainment to be a fragment of an essentially superhuman success, which is won in the form of a higher experience than ours, – a conspectus wherein our human experiences are unified. But what warrant have we for this belief?

I will tell you how I view the case. We need unity of life. In recognizing that need my own pragmatism consists. Now, we never find unity present to our human experience in more than a fragmentary shape. We get hints of higher unity. But only the fragmentary unity is won at any moment of our lives. We therefore form ideas – very fallible ideas – of some unity of experience, an unity such as our idea of any science or any art or any united people or of any community or of any other cause, any other union of many human experiences in one, defines. Now, if our ideas are in any case indeed true, then such an unity is as a fact successfully experienced upon some higher level than ours, and is experienced in some conspectus of life which wins what we need, which approves our loyalty, which fulfils our rational will, and which has in its wholeness what we seek. And then we ourselves with all our ideas and strivings are in and of this higher unity of life. Our loyalty to truth is a hint of this unity. Our transient successes are fragments of the true success. But suppose our ideas

about the structure of this higher unity to be false in any of their details. Suppose, namely, any of our causes to be wrongly viewed by us. Then there is still real that state of facts, whatever it is, which, if just now known to us, would show us this falsity of our various special ideas. Now, only an experience, a consciousness of some system of contents, could show the falsity of any idea. Hence this real state of facts, this constitution of the genuine universe, whatever it is, must again be a reality precisely in so far as it is also a conspectus of facts of experience.

We therefore already possess at least one true idea, precisely in so far as we say: "The facts of the world are what they are; the real universe exposes our errors and makes them *errors*." And when we say this, we once more appeal to a conspectus of experience in which ours is included. For I am in error only in case my present ideas about the true facts of the whole world of experience are out of concord with the very meaning that I myself actively try to assign to these ideas. My ideas are in any detail false, only if the very experience to which I mean to appeal, contains in its conspectus contents which I just now imperfectly conceive. In any case, then, the truth is possessed by precisely that whole of experience which I never get, but to which my colleague also inevitably appeals when he talks of the "long run," or of the experiences of humanity in general.

Whatever the truth, then, or the falsity of any of my special convictions about this or that fact may be, the real world, which refutes my false present ideas in so far as they clash with its wholeness, and which confirms them just in so far as they succeed in having significant relations to its unity, – this real world, I say, is a conspectus of the whole of experience. And this whole of experience is in the closest real relation to my practical life, precisely in so far as, for me, the purpose of my life is to get into unity with the whole universe, and precisely in so far as the universe itself is just that conspectus of experience that we all mean to define and to serve whatever we do, or whatever we say.

But the real whole conspectus of experience, the real view of the totality of life, the real expression of that will to live in and for the whole, which every assertion of truth and every loyal deed expresses – well, it must be a conspectus that includes whatever facts are indeed facts, be they past, present, or future. I call this whole of experience an eternal truth. I do not thereby mean, as my colleague seems to imagine, that the eternal first exists, and that then our life in time comes and copies that eternal order. I mean simply that the whole of experience includes all temporal happenings, contains within itself all changes, and, since it is the one whole that we all want and need, succeeds in so far as it supplements all failures, accepts all, even the blindest of services, and wins what we seek. Thus winning it is practically good and worthy.

But if one insists, How do you know all this? I reply: I know simply that to try to deny the reality of this whole of truth is simply to reaffirm it. Any special idea of mine may be wrong, even as any loyal deed may fail, or as any cause

may become, to human vision, a lost cause. But to deny that there is truth, or that there is a real world, is simply to say that the whole truth is that there is no whole truth, and that the real fact is that there is no fact real at all. Such assertions are plain self-contradictions. And on the other hand, by the term "real world," defined as it is for us by our ideal needs, we mean simply that whole of experience in which we live, and in unity with which we alone succeed.

Loyalty, then, has its own metaphysic. This metaphysic is expressed in a view of things which conceives our experience as bound up in a real unity with all experience, – an unity which is essentially good, and in which all our ideas possess their real fulfilment and success. Such a view is true, simply because if you deny its truth you reaffirm that very truth under a new form.

Truth, meanwhile, means, as pragmatism asserts, the fulfilment of a need. But we all need the superhuman, the city out of sight, the union with all life, – the essentially eternal. This need is no invention of the philosophers. It is the need which all the loyal feel, whether they know it or not, and whether they call themselves pragmatists or not. To define this need as pragmatism in its recent forms has done, to reduce truth to expediency, is to go about crying *cash*, *cash*, in a realm where there is no cash of the sort that loyalty demands, that every scientific inquiry presupposes, and that only the unity of the experiences of many in one furnishes.

If we must, then, conceive recent pragmatism under the figure of a business enterprise, – a metaphor which my colleague's phraseology so insistently invites, – I am constrained therefore to sum up its position thus: First, with a winning clearness, and with a most honorable frankness it confesses bankruptcy, so far as the actually needed cash payments of significant truth are concerned. Secondly, it nevertheless declines to go into the hands of any real receiver, for it is not fond of anything that appears too absolute. And thirdly, it proposes simply and openly to go on doing business under the old style and title of the truth. "After all," it says, "are we not, every one of us, fond of credit values?"

But I cannot conceive the position of the loyal to be, in fact, so hopelessly embarrassed as this. The recent pragmatists themselves are, in fact, practically considered very loyal lovers of genuine truth. They simply have mistaken the true state of their accounts. We all know, indeed, little enough. But the loyal man, I think, whether he imagines himself to be a recent pragmatist or not, has a rational right to say this: My cause partakes of the nature of the only truth and reality that there is. My life is an effort to manifest such eternal truth, as well as I can, in a series of temporal deeds. I may serve my cause ill. I may conceive it erroneously. I may lose it in the thicket of this world of transient experience. My every human deed may involve a blunder. My mortal life may seem one long series of failures. But I know that my cause liveth. My true life is hid with the cause and belongs to the eternal.

THE PROBLEM OF TRUTH IN THE LIGHT OF RECENT DISCUSSION

"The Problem of Truth in the Light of Recent Discussion." *William James and Other Essays on the Philosophy of Life* (New York: Macmillan, 1911), chap. 4, pp. 187–254.

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The question: What is Truth? is a typical philosophical problem. But it has been by no means at all times equally prominent throughout the history of philosophy. The ages in which it has come to the front have been those wherein, as at present, a keenly critical spirit has been predominant. At such times metaphysical interests are more or less subordinated, for a while, to the problems about method, to logical researches, or to the investigations which constitute a Theory of Knowledge.

Such periods, as we know, have recurred more than once since scholastic philosophy declined. And such a period was that which Kant dominated. But the sort of inquiry into the nature of truth which Kant's doctrine initiated quickly led, at the close of the eighteenth century, to a renewed passion for metaphysical construction. The problem regarding the nature of truth still occupied a very notable place in the doctrine of Fichte. It constituted one of the principal concerns, also, of Hegel's so much neglected and ill-understood "Phänomenologie des Geistes." And yet both in the minds of the contemporaries of Fichte and of Hegel, and still more in those of their later disciples and opponents, the problem of truth went again into the back- ground when compared with the metaphysical, the ethical, and the theological interests which constructive idealism and its opponents, in those days, came to represent. Hence wherever one looks, in the history of philosophical opinion between 1830 and 1870, one sees how the problem of truth, although never wholly neglected, still remained, for some decades, out of the focus of philosophical interest.

But the scene rapidly changed about and after the year 1870. Both the new psychology and the new logic, which then began to flourish, seemed, erelong, almost equally to emphasize the importance of a reconsideration of the problem as to the nature of truth. These doctrines did this, especially because

the question whether logic was henceforth to be viewed as a part of psychology became once more prominent, so soon as the psychological researches then undertaken had attracted the strong interest of the philosophical public. And meanwhile the revived interest in Kant, growing, as it did, side by side with the new psychology, called for a reinterpretation of the problems of the critical philosophy. The reawakening of Idealism, in England and in America, called attention, in its own way, to the same problem. The modern philosophical movement in France, – a movement which was, from the outset, almost equally made up of a devotion to the new psychology and of an interest in the philosophy of the sciences, has coöperated in insisting upon the need of a revision of the theory of truth. And to complete the story of the latest philosophy, recent tendencies in ethics, emphasizing as they have done the problems of individualism, and demanding a far-reaching reconsideration of the whole nature of moral truth, have added the weight of their own, often passionate, interest to the requirements which are here in question.

The total result is that we are just now in the storm and stress of a reëxamination of the whole problem of truth. About this problem the philosophical interest of to-day centers. Consequently, whether you discuss the philosophy of Nietzsche or of mathematics, – whether the *Umwertung alter Werte* or the "class of all classes," – whether Mr. Russell's "Contradiction" or the *Uebermensch* is in question, – or whether none of these things attract you at all, so that your inquiries relate to psychology, or to evolution, or to the concepts of the historical sciences, or to whatever other region of philosophy you please, – always the same general issue has sooner or later to be faced. You are involved in some phase of the problem about the nature of truth.

So much, then, as a bare indication of the historical process which has led us into our present position. I propose, in the present address, to offer an interpretation of some of the lessons that, as I think, we may learn from the recent discussions of the problem whose place in all our minds I have thus indicated.

I

It seems natural to begin such a discussion by a classification of the main motives which are represented by the principal recent theories regarding the nature of truth. In enumerating these motives I need not dwell, in this company, upon those historical inferences and traditions whose presence in recent thought is most easily and universally recognized. That Empiricism, – due to the whole history of the English school, modified in its later expressions by the Positivism of a former generation, and by the types of Naturalism which have resulted from the recent progress of the special sciences, – that, I say, such empiricism has affected our modern discussion of the nature of truth, – this we all recognize. I need not insist upon this fact. Moreover, the place

which Kant occupies in the history of the theory of truth, – that again is something which it is needless here to emphasize. And that the teaching of Fichte and of Hegel, as well as still other idealistic traditions, are also variously represented by present phases of opinion regarding our problem, we shall not now have to rehearse. I presuppose, then, these historical commonplaces. It is not, however, in terms of these that I shall now try to classify the motives to which the latest theories of truth are due.

These recent motives, viewed apart from I those unquestionably real influences of the older traditions of the history of philosophy are, to my mind, three in number:

First, there is the motive especially suggested to us modern men by the study of the history of institutions, by our whole interest in what are called evolutionary processes, and by a large part of our recent psychological investigation. This is the motive which leads many of us to describe human life altogether as a more or less progressive adjustment to a natural environment. This motive incites us, therefore, to judge all human products and all human activities as instruments for the preservation and enrichment of man's natural existence. Of late this motive, whose modern forms are extremely familiar, has directly affected the theory of truth. The result appears in a part, although not in the whole, of what the doctrines known as Instrumentalism, Humanism, and Pragmatism have been of late so vigorously teaching, in England, in America, in Italy, in France, and, in still other forms, in Germany.

From the point of view which this motive suggests, human opinions, judgments, ideas, are part of the effort of a live creature to adapt himself to his natural world. Ideas and beliefs are, in a word, organic functions. And truth, in so far as we men can recognize truth at all, is a certain value belonging to such ideas. But this value itself is simply like the value which any natural organic function possesses. Ideas and opinions are instruments whose use lies in the fact that, if they are the right ones, they preserve life and render life stable. Their existence is due to the same natural causes that are represented in our whole organic evolution. Accordingly, assertions or ideas are true in proportion as they accomplish this their biological and psychological function. The value of truth is itself a biological and psychological value. The true ideas are the ones which adapt us for life as human beings. Truth, therefore, grows with our growth, changes with our needs, and is to be estimated in accordance with our success. The result is that all truth is as relative as it is instrumental, as human as it is useful.

The motive which recent Instrumentalism or Pragmatism expresses, in so far as it takes this view of the nature of truth, is of course in one sense an ancient motive. Every cultivated nation, upon beginning to think, recognizes in some measure such a motive. The Greeks knew this motive, and deliberately connected both the pursuit and the estimate of truth with the art of life in ways whose problematic aspects the Sophists already illustrated. Socrates

and his followers, and later the Stoics as well as the Epicureans, also considered, in their various ways, this instrumental aspect of the nature of truth. And even in the Hindoo Upanishads one can find instances of such humanistic motives influencing the inquiry into the problem of truth. But it is true that the historical science of the nineteenth century, beginning, as it did, with its elaborate study of the history of institutions, and culminating in the general doctrines regarding evolution, has given to this motive an importance and a conscious definiteness such as makes its recent embodiment in Pragmatism a very modern and, in many ways, a novel doctrine about the nature of truth.

II

But closely bound up with this first motive in our recent thinking there is a second motive, which in several ways very strongly contrasts with the first. Yet in many minds these two motives are so interwoven that the writers in question are unaware which motive they are following when they utter their views about the nature of truth. No doubt one may indeed recognize the contrast between these motives, and may, nevertheless, urge good reasons for following in some measure both of them, each in its own way. Yet whoever blindly confuses them is inevitably led into hopeless contradictions As a fact, a large number of our recent pragmatists have never learned consciously to distinguish them. Yet they are indeed easy to distinguish, however hard it may be to see how to bring them into a just synthesis.

This second motive is the same as that which, in ethics, is responsible for so many sorts of recent Individualism. It is the motive which in the practical realm Nietzsche glorified. It is the longing to be self-possessed and inwardly free, the determination to submit to no merely external authority. I need not pause to dwell upon the fact that, in its application to the theory of truth, precisely as in its well-known applications to ethics, this motive is Protean. Every one of us is, I suppose, more or less under its influence.

Sometimes, this motive appears mainly as a skeptical motive. Then it criticizes, destructively, traditional truth and thereupon leaves us empty of all assurances. But sometimes it assumes the shape of a sovereign sort of rationalism, whereby the thinking subject, first rebelling against outer authority, creates his own laws, but then insists that all others shall obey these laws. In other cases, however, it takes the form of a purely subjective idealism, confident of its own but claiming no authority. Or again, with still different results, it consciously unites its ethical with its theoretical interests, calls itself "Personal Idealism," and regards as its main purpose, not only the freeing of the individual from all spiritual bondage, theoretical and practical, but also the winning for him of an inner harmony of life. In general, in its highest as in some of its less successful embodiments, when it considers the sort of truth

that we ought most to pursue, this motive dwells, as Professor Eucken has so effectively taught it to dwell, upon the importance of a *Lebensanschauung* as against the rigidity and the pretended finality of a mere *Weltanschauung*.

But meanwhile, upon occasion, this same motive embodies itself in various tendencies of the sort known as Irrationalism. In this last case, it points out to us how the intelligence, after all, is but a single and a very narrow function of our nature, which must not be allowed to supersede or even too much to dominate the rest of our complex and essentially obscure, if fascinating, life. Perhaps, on the very highest levels of life, as it hereupon suggests to us: *Gefühl ist alles*. If not, then at all events, we have the alternative formula: *Im Anfang war die Tat*. Or, once again, the solving word of the theory of truth is Voluntarism. Truth is won by willing, by creative activities. The doer, or perhaps the deed, not only finds, but *is*, the truth. Truth is not to be copied, but to be created. It is living truth. And life is action.

I have thus attempted to indicate, by well-known phrases, the nature of this second motive, – one whose presence in our recent theories of truth I believe that you will all recognize. Despite the Protean character and (as you will all at once see) the mutually conflicting characters of its expressions, you will observe, I think, its deeper unity, and also its importance as an influence in our age. With us at present it acts as a sort of ferment, and also as an endless source of new enterprises. It awakens us to resist the most various kinds of doctrinal authority, – scientific, clerical, academic, popular. It inspires countless forms of Modernism, both within and without the boundaries of the various confessions of Christendom. As an effective motive, one finds it upon the lowest as also upon the highest levels of our intellectual and moral life. In some sense, as I have said, we all share it. It is the most characteristic and the most problematic of the motives of the modern world. Anarchism often appeals to it; yet the most saintly form of devotion, the most serious efforts for the good of mankind, and our sternest and loftiest spiritual leaders, agree in employing it, and in regarding it as in some sense sacred.

Our age shares this motive with the age of the French Revolution, of the older Idealistic movement, and of the Romantic School. All the more unfortunate, as I think, is the fact that many who glory in the originality of their own recent opinions about the nature of truth, know so little of the earlier history of this motive, read so seldom the lesson of the past, and are thus so ill-prepared to appreciate both the spiritual dignity and the pathetic paradox of this tendency to make the whole problem of truth identical with the problem of the rights and the freedom of the individual.

III

I turn herewith to the third of the motives that I have to enumerate. In its most general form it is a very ancient and familiar motive. It is, indeed, very

different from both of the foregoing. Superficially regarded, it seems, at first sight, less an expression of interests that appear ethical. At heart, however, it is quite as deep a motive as either of the others and it is in fact a profoundly ethical motive as well as a genuinely intellectual one. One may say that, in a sense and to some degree, it pervades the whole modern scientific movement, is present wherever two or three are gathered together for a serious exchange of scientific opinions, and is, in most cases, the one motive that, in scientific assemblies, is more or less consciously in mind whenever somebody present chances to refer to the love of truth, or to the scientific conscience of his hearers.

I have called this third on our list of motives an ancient motive. It is so. Yet in modern times it has assumed very novel forms, and has led to scientific and, in the end, to philosophical enterprises which, until recently, nobody would have thought possible.

It would be unwise at this point to attempt to define this motive in abstract terms. I must first exemplify it. When I say that it is the motive to which the very existence of the exact sciences is due, and when I add the remark that our scientific common sense knows this motive as the fondness for dispassionately weighing evidence, and often simply names it the love of objectivity, I raise more questions in your minds regarding the nature of this motive than at this point I can answer. If, however, anybody suggests, say from the side of some form of recent pragmatism, that I must be referring to the nowadays so deeply discredited motives of a pure "Intellectualism," I repudiate at once the suggestion. The motive to which I refer is intensely practical. Men have lived and died for it, and have found it inestimably precious. I know of no motive purer or sweeter in human life. Meanwhile, it indeed chances to be the motive which has partially embodied itself in Pure Mathematics. And neither the tribe of Nietzsche nor the kindred of the instrumentalists have been able justly to define it.

What I am just now interested to point out is that this motive has entered, in very novel ways, into the formulation of certain modern theories of truth. And when I speak of its most novel forms of expression, the historical process to which I refer is the development of the modern critical study of the foundations of mathematics.

To philosophical students in general the existence of metageometrical researches, which began at the outset of the nineteenth century, has now been made fairly familiar. But the non-Euclidean geometry is but a small fragment of that investigation of the foundations of mathematical truth which went on so rapidly during the nineteenth century. Among the most important of the achievements of the century in this direction were the new definitions of continuity and the irrational numbers, the modern exact theory of limits, and the still infant theory of Assemblages. Most important of all, to my mind, were certain discoveries in the field of Logic of which I shall later say a word. I

mention these matters here as examples of the influence of a motive whose highly technical applications may make it seem to one at a distance hopelessly intellectualistic, but whose relation to the theory of truth is close, just because, as I think, its relation to truly ethical motives is also extremely intimate.

The motive in question showed itself at the outset of the nineteenth century, and later in the form of an increased conscientiousness regarding what should be henceforth accepted as a rigid proof in the exact sciences. The Greek geometers long ago invented the conception of rigid methods of proof and brought their own methods, in certain cases, very near to perfection. But the methods that they used proved to be inapplicable to many of the problems of modern mathematics. The result was that, in the seventeenth and eighteenth centuries, the mathematical sciences rapidly took possession of new realms of truth, but in doing so sacrificed much of the old classic rigidity. Nevertheless, regarded as the instrumentalists now desire us to regard truth, the mathematical methods of the eighteenth century were indeed incomparably more successful in adjusting the work of the physical sciences to the demands of experience than the methods of the Greek geometers had ever been. If instrumentalism had been the whole story of man's interest in truth, the later developments would have been impossible. Nevertheless the modern scientific conscience somehow became increasingly dissatisfied with its new mathematical possessions. It regarded them as imperfectly won. It undertook to question, in a thousand ways, its own methods and its own presuppositions. It learned to reject altogether methods of proof which, for a time, had satisfied the greatest constructive geniuses of earlier modern mathematics. The result has been the development of profoundly novel methods, both of research and of instruction in the exact sciences. These methods have in many ways brought to a still higher perfection the Greek ideal of rigid proof. Yet the same methods have shown themselves to be no mere expressions of a pedantic intellectualism. They have meant clearness, self-possession, and a raising of the scientific conscience to higher levels. Meanwhile, they proved potent both in conquering new realms and in discovering the wonderful connections that we now find linking together types of exact truth which at first sight appeared to be hopelessly diverse.

In close union with the development of these new methods in the exact sciences, and, as I may say, in equally close union with this new scientific conscience, there has gradually come into being a reformed Logic, – a logic still very imperfectly expounded in even the best modern textbooks, and as yet hardly grasped, in its unity, by any one investigator, – but a logic which is rapidly progressing, which is full of beauty, and which is destined, I believe, profoundly to influence, in the near future, our whole philosophy of truth. This new logic appears to offer to us an endless realm for detailed researches. As a set of investigations it is as progressive as any instrumentalist can desire. The best names for it, I think, are the names employed by several different

thinkers who have contributed to its growth. Our American logician, Mr. Charles Peirce, named it, years ago, the Logic of Relatives. Mr. Russell has called it the Logic, or the Calculus, of Relations. Mr. Kempe has proposed to entitle it the Theory of Mathematical Form. One might also call it a new and general theory of the Categories. Seen from a distance, as I just said, it appears to be a collection of highly technical special researches, interesting only to a few. But when one comes into closer contact with any one of its serious researches, one sees that its main motive is such as to interest every truthful and reflective inquirer who really grasps that motive, while the conception of truth which it forces upon our attention is a conception which neither of the other motives just characterized can be said adequately to express.

In so far as the new logic has up to this time given shape to philosophical theories of truth, it in part appears to tend towards what the pragmatists nowadays denounce as Intellectualism. As a fact Mr. Bertrand Russell, the brilliant and productive leader of this movement in England, and his philosophical friend Mr. George Moore, seem to regard their own researches as founded upon a sort of new Realism, which views truth as a realm wholly independent of the constructive activities by which we ourselves find or pursue truth. But the fact that Mr. Charles Peirce, one of the most inventive of the creators of the new logic, is also viewed by the Pragmatists as the founder of their own method, shows how the relation of the new logic to the theory of truth is something that still needs to be made clear. As a fact, I believe that the outcome of the new logic will be a new synthesis of Voluntarism and Absolutism.

What I just now emphasize is, that this modern revision of the concepts of the exact sciences, and this creation of a new logic, are in any case due to a motive which is at once theoretical and ethical. It is a motive which has defined standards of rigidity in proof such as were, until recently, unknown. In this sense it has meant a deepening and quickening of the scientific conscience. It has also seemed, in so far, to involve a rejection of that love of expediency in thinking which is now a favorite watchword of pragmatists and instrumentalists. And when viewed from this side the new logic obviously tends to emphasize some form of absolutism, to reject relativism in thinking, to make sterner requirements upon our love of truth than can be expressed in terms of instrumentalism or of individualism. And yet the motive which lies beneath this whole movement has been, I insist, no barren intellectualism. The novelty of the constructions to which this motive has led, – the break with tradition which the new geometry (for instance) has involved, – such things have even attracted, from a distance, the attention of some of the least exactly trained of the pragmatist thinkers, and have aroused their hasty and uncomprehending sympathy. "This non-Euclidean geometry," they have said, "these novel postulates, these '*freie Schöpfungen des menschlichen Geistes*' (as

Dedekind, himself one of the great creative minds of the new logical movement, has called the numbers), – well, surely these must be instances in favor of *our* theory of truth. Thus, as we should have predicted, novelties appear in what was supposed to be an absolutely fixed region. Thus (as Professor James words the matter), human thought 'boils over', and ancient truths alter, grow, or decay." Yet when modern pragmatists and relationists use such expressions, they fail to comprehend the fact that the new discoveries in these logical and mathematical fields simply exemplify a *more* rigid concept of truth than ever, before the new movement began, had been defined in the minds of the mathematicians themselves. The non-Euclidean geometry, strange to say, is not a discovery that we are any freer than we were before to think as we like regarding the system of geometrical truth. It is one part only of what Hilbert has called the "logical analysis" of our concept of space. When we take this analysis as a whole, it involves a deeper insight than Euclid could possibly possess into the unchangeable necessities which bind together the system of logical relationships that the space of our experience merely exemplifies. Nothing could be more fixed than are these necessities. As for the numbers, which Dedekind called "*freie Schöpfungen*," – well, his own masterpiece of logical theory is a discovery and a rigid demonstration of a very remarkable and thoroughly objective truth about the fundamental relations in terms of which we all of us do our thinking. His proof that all of the endless wealth of the properties of the ordinal numbers follows from a certain synthesis of two of the simplest of our logical conceptions, neither one of which, when taken alone, seems to have anything to do with the conception of order or of number, – this proof, I say, is a direct contribution to a systematic theory of the categories, and, as such, is, to the logical inquirer, a dramatically surprising discovery of a realm of objective truth, which nobody is free to construct or to abandon at his pleasure. If this be relativism, it is the relativism of an eternal system of relations. If this be freedom, it is the divine freedom of a self-determined, but, for that very reason, absolutely necessary fashion of thought and of activity.

Well, – to sum up, – this third motive in modern inquiry has already led us to the discovery of what are, for us, novel truths regarding the fundamental relations upon which all of our thought and all of our activity rest. These newly discovered truths possess an absoluteness which simply sets at naught the empty trivialities of current relativism. Such truth has, in fact, the same sort of relation to the biologically "instrumental" value of our thinking processes as the Theory of Numbers (that "divine science," as Gauss called it) has to the account books of the shopkeeper.

And yet, as I must insist, the motive that has led us to this type of absolutism is no pure intellectualism. And the truth in question is as much a truth about our modes of activity as the purest voluntarism could desire it to be. In brief, there is, I believe, an absolute voluntarism, a theory of the way in which activ-

ities must go on if they go on at all. And, as I believe, just such a theory is that which in future is to solve for us the problem of the nature of truth.

I have illustrated our third motive at length. Shall I now try to name it? Well, I should say that it is at bottom the same motive that lay at the basis of Kant's Critical Philosophy; but it is this motive altered by the influence of the modern spirit. It is the motive which leads us to seek for clear and exact self-consciousness regarding the principles both of our belief and of our conduct. This motive leads us to be content only in case we can indeed find principles of knowledge and of action, – principles, not mere transient expediences, and not mere caprices. On the other hand, this motive bids us decline to accept mere authority regarding our principles. It requires of us freedom along with insight, exactness side by side with assurance, and self-criticism as well as search for the ultimate.

IV

In thus sketching for you these three motives, I have been obliged to suggest my estimate of their significance. But this estimate has so far been wholly fragmentary. Let me next indicate the sense in which I believe that each of these three motives tends, in a very important sense, to throw light upon the genuine theory of truth.

I begin here with the first of the three motives, – namely, with the motive embodied in recent instrumentalism. Instrumentalism views truth as simply the value belonging to certain ideas in so far as these ideas are biological functions of our organisms, and psychological functions whereby we direct our choices and attain our successes.

Wide and manifold are the inductive evidences which the partisans of such theories of truth adduce in support of their theory. There is the evidence of introspection and of the modern psychological theory of the understanding. Opinions, beliefs, ideas, – what are they all but accompaniments of the motor processes whereby, as a fact, our organisms are adjusted to their environment? To discover the truth of an idea, what is that for any one of us but to observe our success in our adjustment to our situation? Knowledge is power. Common sense long ago noted this fact. Empiricism has also since taught us that we deal only with objects of experience. The new instrumentalism adds to the old empiricism simply the remark that we possess truth in so far as we learn how to control these objects of experience. And to this more direct evidence for the instrumental theory of truth is added the evidence derived from the whole work of the modern sciences. In what sense are scientific hypotheses and theories found to be true? Only in this sense, says the instrumentalist, – only in this sense, that through these hypotheses we acquire constantly new sorts of control over the course of our experience. If we turn from scientific to moral truth, we find a similar result. The moral ideas

of any social order are practical plans and practical demands in terms of which this social order endeavors, by controlling the activities of its members, to win general peace and prosperity. The truth of moral ideas lies solely in this their empirical value in adjusting individual activities to social demands, and in thus winning general success for all concerned.

Such are mere hints of the evidences that can be massed to illustrate the view that the truth of ideas is actually tested, and is to be tested, by their experienced workings, by their usefulness in enabling man to control his empirically given situation. If this be the case, then truth is always relative to the men concerned, to their experience, and to their situations. Truth grows, changes, and refuses to be tested by absolute standards. It *happens* to ideas, in so far as they *work*. It belongs to them when one views them as instruments to an end. The result of all this is a relativistic, an evolutionary, theory of truth. For such a view logic is a part of psychology, – a series of comments upon certain common characteristics of usefully working ideas and opinions. Ethical theory is a branch of evolutionary sociology. And in general, if you want to test the truth of ideas and opinions, you must look forward to their workings, not backward to the principles from which they might be supposed to follow, nor yet upwards to any absolute standards which may be supposed to guide them, and least of all to any realm of fixed facts that they are supposed to be required, willy nilly, to copy. Truth is no barren repetition of a dead reality, but belongs, as a quality, to the successful deeds by which we produce for ourselves the empirical realities that we want.

Such is the sort of evidence which my friends, Professor James and Professor Dewey, and their numerous followers, in recent discussion, have advanced in favor of this instrumental, practical, and evolutionary theory of truth. Such are the considerations which, in other forms, Mach has illustrated by means of his history and analyses of the work of modern science.

Our present comment upon this theory must be given in a word. It contains indeed a report of the truth about our actual human life, and about the sense in which we all seek and test and strive for truth, precisely in so far as truth-seeking is indeed a part of our present organic activities. But the sense in which this theory is thus indeed a true account of a vast range of the phenomena of human life is not reducible to the sense which the theory itself ascribes to the term "truth."

For suppose I say, reporting the facts of the history of science: "Newton's theory of gravitation proved to be true, and its truth lay in this: The definition and the original testing of the theory consisted in a series of the organic and psychological functions of the live creature Newton. His theories were for him true in so far as, after hard work, to be sure, and long waiting, they enabled him to control and to predict certain of his own experiences of the facts of nature. The same theories are still true for us because they have successfully guided, and still guide, certain observations and experiences of

the men of to-day." This statement reduces the truth of Newton's theory to the type of truth which instrumentalism demands. But in what sense is my account of this matter itself a true account of the facts of human life? Newton is dead. As mortal man he succeeds no longer. His ideas, as psychological functions, died with him. His earthly experiences ceased when death shut his eyes. Wherein consists to-day, then, the historical truth that Newton ever existed at all, or that the countless other men whom his theories are said to have guided ever lived, or experienced, or succeeded? And if I speak of the men of to-day, in what sense is the statement true that they now live, or have experience, or use Newton's theory, or succeed with it as an instrument? No doubt all these historical and socially significant statements of mine are indeed substantially true. But does their truth consist in my success in using the ideal instruments that I use when I utter these assertions? Evidently I mean, by calling these my own assertions true, much more than I can interpret in terms of my experience of their success in guiding my act.

In brief, the truth that historical events ever happened at all; the truth that there ever was a past time, or that there ever will be a future time; the truth that anybody ever succeeds, except in so far as I myself, just now, in the use of these my present instruments for the transient control of my passing experience chance to succeed; the truth that there is any extended course of human experience at all, or any permanence, or any long-lasting success, – well, all such truths, they are indeed true, but their truth cannot possibly consist in the instrumental value which any man ever experiences as belonging to any of his own personal ideas or acts. Nor can this truth consist in anything that even a thousand or a million men can separately experience, each as the success of his own ideal instruments. For no one man experiences the success of any man but himself, or of any instruments but his own; and the truth, say, of Newton's theory consists, by hypothesis, in the perfectly objective fact that generations of men have really succeeded in guiding their experience by this theory. But that this is the fact no man, as an individual man, ever has experienced or will experience under human conditions.

When an instrumentalist, then, gives to us his account of the empirical truth that men obtain through using their ideas as instruments to guide and to control their own experience, his account of human organic and psychological functions may be, – yes, is, – as far as it goes, true. But if it is true at all, then it is true as an account of the characters actually common to the experience of a vast number of men. It is true, if at all, as a report of the objective constitution of a certain totality of facts which we call human experience. It is, then, true in a sense which no man can ever test by the empirical success of his own ideas as his means of controlling his own experiences. Therefore the truth which we must ascribe to instrumentalism, if we regard it as a true doctrine at all, is precisely a truth, not in so far as instrumentalism is itself an instrument for helping on this man's or that man's way of controlling his

experience. If instrumentalism is true, it is true as a report of facts about the general course of history, of evolution, and of human experience, – facts which transcend every individual man's experience, verifications, and successes. To make its truth consist in the mere sum of the various individual successes is equally vain, unless indeed that sum is a fact. But no individual man ever experiences that fact.

Instrumentalism, consequently, expresses no motive which by itself alone is adequate to constitute any theory of truth. And yet, as I have pointed out, I doubt not that instrumentalism gives such a substantially true account of man's natural functions as a truth seeker. Only the sense in which instrumentalism is a true account of human life is opposed to the adequacy of its own definition of truth. The first of our three motives is, therefore, useful only if we can bring it into synthesis with other motives. In fact it is useless to talk of the success of the human spirit in its efforts to win control over experience, unless there is indeed a human spirit which is more than any man's transient consciousness of his own efforts, and unless there is an unity of experience, an unity objective, real, and supratemporal in its significance.

V

Our result so far is that man indeed uses his ideas as means of controlling his experience, and that truth involves such control, but that truth cannot be defined solely in terms of our personal experience of our own success in obtaining this control.

Hereupon the second of the motives which we have found influencing the recent theories of truth comes to our aid. If instrumentalism needs a supplement, where are we, the individual thinkers, to look for that supplement, except in those inner personal grounds which incline each of us to make his own best interpretations of life precisely as he can, in accordance with his own will to succeed, and in accordance with his individual needs?

To be sure, as one may still insist, we are always dealing with live human experience, and with its endless constraints and limitations. And when we accept or reject opinions, we do so because, at the time, these opinions seem to us to promise a future empirical "working," a successful "control" over experience, – in brief, a success such as appeals to live human beings. Instrumentalism in so far correctly defines the nature which truth possesses in so far as we ever actually verify truth. And of course we always believe as we do because we are subject to the constraint of our present experience. But since we are social beings, and beings with countless and varied intelligent needs, we constantly define and accept as valid very numerous ideas and opinions whose truth we do not hope personally to verify. Our act in accepting such unverified truths is (as Professor James states the case) essentially similar to the act of the banker in accepting credit values instead of cash.

A note or other evidence of value is good if it *can* be turned into cash at some agreed time, or under specified conditions. Just so, an idea is true, not merely at the moment when it enables somebody to control his own experience. It is true if, under definable conditions which, as a fact, you or I may never verify, it *would* enable some human being whose purposes agree with ours to control his own experience. If we personally do not verify a given idea, we can still accept it then upon its credit value. We can accept it precisely as paper, which cannot now be cashed, is accepted by one who regards that paper as, for a given purpose, or to a given extent, equivalent to cash. A bond, issued by a government, may promise payment after fifty years. The banker may to-day accept such a bond as good, and may pay cash for it, although he feels sure that he personally will never live to see the principal repaid by the borrower.

Now, as Professor James would say, it is in this sense that our ideas about past time, and about the content of other men's minds, and about the vast physical world, "with all its stars and milky ways," are accepted as true. Such ideas have for us credit values. We accept these ideas as true because we need to trade on credits. Borrowed truth is as valuable in the spiritual realm as borrowed money is in the commercial realm. To believe a now unverified truth is simply to say: "I accept that idea, upon credit, as equivalent to the cash payments in terms of live experience which, as I assert, I could get in case I had the opportunity."

And so much it is indeed easy to make out about countless assertions which we all accept. They are assertions about experience, but not about our present experience. They are made under various constraints of convention, habit, desire, and private conviction, but they are opinions whose truth is for us dependent upon our personal assent and acquiescence.

Herewith, however, we face what is, for more than one modern theory of truth, a very critical question. Apparently it is one thing to say: "I accept this opinion upon credit," and quite another thing to say: "The truth of this opinion consists, solely and essentially, in the fact that it is credited by me." In seeming, at least, it is one thing to assert: "We trade upon credit; we deal in credits," and quite another thing to say: "There is no value behind this bond or behind this bit of irredeemable paper currency, except its credit value." But perhaps a modern theory of truth may decline to accept such a difference as ultimate. Perhaps this theory may say: The truth *is* the credit. As a fact, a vast number of our human opinions – those, for instance, which relate to the past, or to the contents of other men's minds – appear, within the range of our personal experience, as credits whose value we, who believe the opinions, cannot hope ever to convert into the cash of experience. The banker who holds the bond not maturing within his own lifetime can, after all, if the bond is good, sell it to-day for cash. And that truth which he can personally and empirically test whenever he wants to test, is enough to warrant his act in

accepting the credit. But I, who am confident of the truths of history, or of geology, or of physics, and who believe in the minds of other men, – I accept as valid countless opinions that are for me, in my private capacity and from an empirical point of view, nothing but irredeemable currency. In vain do I say: "I *could* convert these ideas into the cash of experience *if* I were some other man, or *if* I were living centuries ago instead of to-day." For the question simply recurs: In what sense are these propositions about my own possible experience true when I do not test their truth, – yes, true although I, personally *cannot* test their truth? These credits, irredeemable in terms of the cash of my experience, – wherein consists their true credit value?

Here one apparently stands at the parting of the ways. One can answer this question by saying: "The truth of these assertions (or their falsity, if they are false) belongs to them whether I credit them or no, whether I verify them or not. Their truth or their falsity is their own character and is independent of my credit and my verification." But to say this appears to be, after all, just the intellectualism which so many of our modern pragmatists condemn. There remains, however, one other way. One can say: "The truth of the unverified assertions *consists simply in the fact that*, for our own private and individual ends, *they are credited*. Credit is relative to the creditor. If he finds that, on the whole, it meets his purpose to credit, he credits. And there is no truth, apart from present verifications, except this truth of credit." In other words, that is true for me which I find myself accepting as my way of reacting to my situation.

This, I say, is a theory of truth which can be attempted. Consider what a magnificent freedom such a theory gives to all of us. Credit is relative to the creditor. To be sure, if ever the day of reckoning should come, one would be subject, at the moment of verification, to the constraints of experience. At such times, one would either get the cash or would not get it. But after all very few of our ideas about this great and wonderful world of ours ever are submitted to any such sharp tests. History and the minds of other men, – well, our personal opinions about these remain credits that no individual amongst us can ever test for himself. As your world is mainly made up of such things, your view of your world remains, then, subject to your own needs. It ought to be thus subject. There is no absolute truth. There is only the truth that you need. Enter into the possession of your spiritual right. Borrow Nietzsche's phraseology. Call the truth of ordinary intellectualism mere *Sklavenwahrheit*. It pretends to be absolute; but only the slaves believe in it. "Henceforth," so some Zarathustra of a new theory of truth may say, "I teach you *Herrenwahrheit*." Credit what you choose to credit. Truth is made for man, not man for truth. Let your life "boil over" into new truth as much as you find such effervescence convenient. When, apart from the constraints of present verification, and apart from mere convention, I say: "This opinion of mine is true," I mean simply: "To my mind, lord over its own needs, this

assertion now appears expedient." Whenever my expediency changes, my truth will change.

But does anybody to-day hold just *this* theory of truth? I hesitate to make accusations which some of my nearest and dearest friends may repudiate as personally injurious. But this I can say: I find a great many recent theorists about truth talking in just this spirit so long as they feel free to glorify their spiritual liberty, to amuse their readers with clever assaults upon absolutism, and to arouse sympathy by insistence upon the human and the democratic attractiveness of the novel views of truth that they have to advance. Such individualism, such capriciousness, is in the air. Our modern theorists of truth frequently speak in this way. When their expressions of such views are criticized, they usually modify and perhaps withdraw them. What, as individuals, such teachers really mean, I have no right to say. Nobody but themselves can say; and some of them seem to say whatever they please. But this I know: Whoever identifies the truth of an assertion with his own individual interest in making that assertion may be left to bite the dust of his own confusion in his own way and time. The outcome of such essential waywardness is not something that you need try to determine through controversy. It is self-determined. For in case I say to you: "The sole ground for my assertions is this, that I please to make them," – well, at once I am defining exactly the attitude which we all alike regard as the attitude of one who chooses *not* to tell the truth. And if, hereupon, I found a theory of truth upon generalizing such an assertion, – well, I am defining as truth-telling precisely that well-known practical attitude which is the contradictory of the truth-telling attitude. The contrast is not one between intellectualism and pragmatism. It is the contrast between two well-known attitudes of will, – the will that is loyal to truth as an universal ideal, and the will that is concerned with its own passing caprices. If I talk of truth, I refer to what the truth-loving sort of will seeks. If hereupon I define the true as that which the individual personally views as expedient in opinion or in assertion, I contradict myself, and may be left to my own confutation. For the position in which I put myself, by this individualistic theory of truth, is closely analogous to the position in which Epimenides the Cretan, the hero of the fallacy of the liar, was placed by his own so famous thesis.

VI

And yet, despite all this, the modern assault upon mere intellectualism is well founded. The truth of our assertions is indeed definable only by taking account of the meaning of our own individual attitudes of will, and the truth, whatever else it is, is at least instrumental in helping us towards the goal of all human volition. The only question is whether the will really means to aim at doing something that has a final and eternal meaning.

Herewith I suggest a theory of truth which we can understand only in case we follow the expressions of the third of the three modern motives to which I have referred. I have said that the new logic and the new methods of reasoning in the exact sciences are just now bringing us to a novel comprehension of our relation to absolute truth. I must attempt a very brief indication as to how this is indeed the case.

I have myself long since maintained that there is indeed a logic of the will, just as truly as there is a logic of the intellect. Personally, I go further still. I assert: all logic is the logic of the will. There is no pure intellect. Thought is a mode of action, a mode of action distinguished from other modes mainly by its internal clearness of self-consciousness, by its relatively free control of its own procedure, and by the universality, the impersonal fairness and obviousness of its aims and of its motives. An idea in the consciousness of a thinker is simply a present consciousness of some expression of purpose, – a plan of action. A judgment is an act of a reflective and self-conscious character, an act whereby one accepts or rejects an idea as a sufficient expression of the very purpose that is each time in question. Our whole objective world is meanwhile defined for each of us in terms of our ideas. General assertions about the meaning of our ideas are reflective acts whereby we acknowledge and accept certain ruling principles of action. And in respect of all these aspects of doctrine I find myself at one with recent voluntarism, whether the latter takes the form of instrumentalism, or insists upon some more individualistic theory of truth. But for my part, in spite, or in fact because of this my voluntarism, I cannot rest in any mere relativism. Individualism is right in saying, "I will to credit this or that opinion." But individualism is wrong in supposing that I can ever be content with my own will in as far as it is merely an individual will. The will to my mind is to all of us nothing but a thirst for complete and conscious self-possession, for fullness of life. And in terms of this its central motive, the will defines the truth that it endlessly seeks as a truth that possesses completeness, totality, self-possession, and therefore absoluteness. The fact that, in our human experience, we never meet with any truths such as completely satisfy our longing for insight, this fact we therefore inevitably interpret, not as any defect in the truth, but as a defect in our present state of knowledge a limitation due to our present type of individuality. Hence we acknowledge a truth which transcends our individual life. Our concepts of the objectively real world, our ethical ideals of conduct, our estimates of what constitutes the genuine worth of life, – all these constructions of ours are therefore determined by the purpose to conform our selves to absolute standards We will the eternal. We define the eternal. And this we do whenever we talk of what we call genuine facts or actualities, or of the historical content of human experience, or of the physical world that our sciences investigate. If we try to escape this inner necessity of our whole voluntary and self-conscious life, we simply contradict

ourselves. We can define the truth even of relativism only by asserting that relativism is after all absolutely true. We can admit our ignorance of truth only by acknowledging the absoluteness of that truth of which we are ignorant. And all this is no caprice of ours. All this results from a certain necessary nature of our will which we can test as often as we please by means of the experiment of trying to get rid of the postulate of an absolute truth. We shall find that, however often we try this experiment, the denial that there is any absolute truth simply leads to its own denial, and reinstates what it denies.

The reference that I a little while since made to our assertions regarding the past, and regarding the minds of other men, has already suggested to us how stubbornly we all assert certain truths which, for every one of us, transcend empirical verification, but which we none the less regard as absolutely true. If I say: "There never was a past," I contradict myself, since I assume the past even in asserting that a past never was. As a fact our whole interpretation of our experience is determined, in a sense akin to that which Kant defined, by certain modes of our own activity, whose significance is transcendental, even while their whole application is empirical. These modes of our activity make all our empirical sciences logically possible. Meanwhile it need not surprise us to find that Kant's method of defining these modes of our activity was not adequate, and that a new logic is giving us, in this field, new light. The true nature of these necessary modes of our activity becomes most readily observable to us in case we rightly analyze the methods and concepts, not of our own empirical, but rather of our mathematical sciences. For in these sciences our will finds its freest expression. And yet for that very reason in these sciences the absoluteness of the truth which the will defines is most obvious. The new logic to which I refer is especially a study of the logic of mathematics.

VII

That there are absolutely true propositions, the existence of the science of pure mathematics proves. It is indeed the case that, as Russell insists, the propositions of pure mathematics are (at least in general) hypothetical propositions. But the hypothetical character of the propositions of pure mathematics does not make the truth that a certain mathematically interesting consequent follows from a certain antecedent, in any way less than absolutely true. The assertion, "*a* implies *b*," where *a* and *b* are propositions, may be an absolutely true assertion; and, as a fact, the hypothetical assertions of pure mathematics possess this absolutely true character. Now it is precisely the nature and ground of this absoluteness of purely mathematical truth upon which recent research seems to me to have thrown a novel light. And the light which has appeared in this region seems to me to be destined to reflect itself anew upon all regions and types of truth, so that empirical and contingent, and historical

and psychological and ethical truth, different as such other types of truth may be from mathematical truth, will nevertheless be better understood, in future, in the light of the newer researches into the logic of pure mathematics. I can only indicate, in the most general way, the considerations which I here have in mind.

At the basis of every mathematical theory, – as, for instance, at the basis of pure geometry, or pure number theory, – one finds a set of fundamental concepts, the so-called "indefinables" of the theory in question, and a set of fundamental "propositions," the so-called "axioms" of this theory. Modern study of the logic of pure mathematics has set in a decidedly novel light the question: What is the rational source, and what is the logical basis of these primal concepts and of these primal propositions of mathematical theory? I have no time here to deal with the complications of the recent discussion of this question. But so much I can at once point out: there are certain concepts and certain propositions which possess the character of constituting the doctrine which may be called, in the modern sense, Pure Logic. Some of these concepts and propositions were long ago noted by Aristotle. But the Aristotelian logic actually took account of only a portion of the concepts of pure logic, and was able to give, of these concepts, only a very insufficient analysis. There is a similar inadequacy about the much later analysis of the presuppositions of logic which Kant attempted. The theory of the categories is in fact undergoing, at present, a very important process of reconstruction. And this process is possible just because we have at present discovered wholly new means of analyzing the concepts and propositions in question. I refer (as I may in passing state) to the means supplied by modern Symbolic Logic.

Well, the concepts of pure logic, when once defined, constitute an inexhaustible source for the constructions and theories of pure mathematics A set of concepts and of propositions such as can be made the basis of a mathematical theory is a set possessing a genuine and unquestionable significance if, and only if, these concepts and these propositions can be brought into a certain definite relation with the concepts and propositions of pure logic. This relation may be expressed by saying that if the conditions of general logical theory are such as to imply the valid possibility of the mathematical definitions and constructions in question, then – but only then – are the corresponding mathematical theories at once absolutely valid and significant. In brief, pure mathematics consists of constructions and theories based wholly upon the conceptions and propositions of pure logic.

The question as to the absoluteness of mathematical truth hereupon reduces itself to the question as to the absoluteness of the truths of pure logic.

Wherein, however, consists this truth of pure logic? I answer, at once, in my own way. Pure logic is the theory of the mere form of thinking. But what is thinking? Thinking, I repeat, is simply our activity of willing precisely in so far as we are clearly conscious of what we do and why we do it. And

thinking is found by us to possess an absolute form precisely in so far as we find that there are certain aspects of our activity which sustain themselves even in and through the very effort to inhibit them. One who says: "I do not admit that for me there is any difference between saying yes and saying no," – says "no," and distinguishes negation from affirmation, even in the very act of denying this distinction. Well, affirmation and negation are such self-sustaining forms of our will activity and of our thought activity. And such self-sustaining forms of activity determine absolute truths. For instance, it is an absolute truth that there is a determinate difference between the assertion and the denial of a given proposition, and between the doing and the not doing of a given deed. Such absolute truths may appear trivial enough. Modern logical theory is for the first time making clear to us how endlessly wealthy in consequences such seemingly trivial assertions are.

The absoluteness of the truths of pure logic is shown through the fact that you can test these logical truths in this reflective way. They are truths such that to deny them is simply to reassert them under a new form. I fully agree, for my own part, that absolute truths are known to us only in such cases as those which can be tested in this way. I contend only that recent logical analysis has given to us a wholly new insight as to the fruitfulness of such truths.

VIII

An ancient example of a use of that way of testing the absoluteness of truth which is here in question is furnished by a famous proof which Euclid gave of the theorem, according to which there exists no last prime number in the ordinal sequence of the whole numbers. Euclid, namely, proved this theorem by what I suppose to be one device whereby individual instances of absolute truths are accessible to men. He proved the theorem by showing that the denial of the theorem implies the truth of the theorem. That is, if I suppose that there is a last prime number, I even thereby provide myself with the means of constructing a prime number, which comes later in the series of whole numbers than the supposed "last" prime, and which certainly exists just as truly as the whole numbers themselves exist. Here, then, is one classic instance of an absolute truth.

To be sure Euclid's theorem about the prime numbers is a hypothetical proposition. It depends upon certain concepts and propositions about the whole numbers. But the equally absolute truth that the whole numbers themselves form an endless series, with no last term, has been subjected, in recent times, to wholly new forms of reexamination by Dedekind, by Frege, and by Russell. The various methods used by these different writers involve substantially the same sort of consideration as that which Euclid already applied to the prime numbers. There are certain truths which you cannot deny without

denying the truth of the first principles of pure logic. But to deny these latter principles is to reassert them under some other and equivalent form. Such is the common principle at the basis of the recent reëxamination of the concept of the whole numbers. Dedekind, in showing that the existence of the dense ordinal series of the rational numbers implies the existence of the Dedekind *Schnitte* of this series, discovered still another absolute, although of course hypothetical, truth which itself implies the truth of the whole theory of the so-called real numbers. Now all such discoveries are indeed revelations of absolute truth in precisely this sense, that at the basis of all the concepts and propositions about number there are concepts and propositions belonging to pure logic; while if you deny these propositions of pure logic, you imply, by this very denial, the reassertion of what you deny. To discover this fact, to see that the denial of a given proposition implies the reassertion of that proposition, is not, as Kant supposed, something that you can accomplish, if at all, then only by a process of mere "analysis." On the contrary, Euclid's proof as to the prime numbers, and the modern exact proofs of the fundamental theorems of mathematics, involve, in general, a very difficult synthetic process, – a construction which is by no means at first easy to follow. And the same highly synthetic constructions run through the whole of modern logic.

Now once again what does one discover when he finds out such absolute truths? I do not believe, as Russell believes, that one in such cases discovers truths which are simply and wholly independent of our constructive processes. On the contrary, what one discovers is distinctly what I must call a voluntaristic truth, – a truth about the creative will that thinks the *truth*. One discovers, namely, that our constructive processes, viewed just as activities, possess a certain absolute nature and conform to their own self-determined but, for that very reason, absolute laws. One finds out in such cases what one must still, with absolute necessity, do under the presupposition that one is no longer bound by the constraints of ordinary experience, but is free, as one is in pure mathematics free, to construct whatever one can construct. The more, in such cases, one deals with what indeed appear to be, in one aspect, "*freie Schöpfungen des menschlichen Geistes*," the more one discovers that their laws, which are the fundamental and immanent laws of the will itself, are absolute. For one finds what it is that one must construct even if one denies that, in the ideal world of free construction which one is seeking to define, that construction has a place. In brief, all such researches illustrate the fact that while the truth which we acknowledge is indeed relative to the will which acknowledges that truth, still what one may call the pure form of willing is an absolute form, a form which sustains itself in the very effort to violate its own laws. We thus find out absolute truth, but it is absolute truth about the nature of the creative will in terms of which we conceive all truths.

Now it is perfectly true that such absolute truth is not accessible to us in the empirical world, in so far as we deal with individual phenomena. But it

is also true that we all of us conceive the unity of the world of experience – the meaning, the sense, the connection of its facts – in terms of those categories which express precisely this very form of our creative activity. Hence, although every empirical truth is relative, all relative truth is inevitably defined by us as subject to conditions which themselves are absolute. This, which Kant long ago maintained, gets a very new meaning in the light of recent logic, – a far deeper meaning, I think, than Kant could conceive.

In any case, the new logic, and the new mathematics, are making us acquainted with absolute truth, and are giving to our knowledge of this truth a clearness never before accessible to human thinking. And yet the new logic is doing all this in a way that to my mind is in no wise a justification of the intellectualism which the modern instrumentalists condemn. For what we hereby learn is that all truth is indeed relative to the expression of our will, but that the will inevitably determines for itself forms of activity which are objectively valid and absolute, just because to attempt to inhibit these forms is once more to act, and is to act in accordance with them. These forms are the categories both of our thought and of our action. We recognize them equally whether we consider, as in ethics, the nature of reasonable conduct, or, as in logic, the forms of conceptual construction, or, as in mathematics, the ideal types of objects that we can define by constructing, as freely as possible, in conformity with these forms. When we turn back to the world of experience, we inevitably conceive the objects of experience in terms of our categories. Hence the unity and the transindividual character which rightly we assign to the objects of experience. What we know about these objects is always relative to our human needs and activities. But all of this relative knowledge is – however provisionally – defined in terms of absolute principles. And that is why the scientific spirit and the scientific conscience are indeed the expression of motives, which you can never reduce to mere instrumentalism, and can never express in terms of any individualism. And that is why, wherever two or three are gathered together in any serious moral or scientific enterprise, they believe in a truth which is far more than the mere working of any man's ephemeral assertions.

In sum, an absolute truth is one whose denial implies the reassertion of that same truth. To us men, such truths are accessible only in the realm of our knowledge of the forms that predetermine all of our concrete activities. Such knowledge we can obtain regarding the categories of pure logic and also regarding the constructions of pure mathematics. In dealing, on the other hand, with the concrete objects of experience, we are what the instrumentalists suppose us to be, namely, seekers for a successful control over this experience. And as the voluntarists also correctly emphasize, in all our empirical constructions, scientific and practical, we express our own individual wills and seek such success as we can get. But there remains the fact that in all these constructions we are expressing a will which, as logic and pure mathematics

teach us, has an universal absolute nature, – the same in all of us. And it is for the sake of winning some adequate expression of this our absolute nature, that we are constantly striving in our empirical world for a success which we never can obtain at any instant, and can never adequately define in any merely relative terms. The result appears in our ethical search for absolute standards, and in our metaphysical thirst for an absolute interpretation of the universe, – a thirst as unquenchable as the over-individual will that expresses itself through all our individual activities is itself world-wide, active, and in its essence absolute.

In recognizing that all truth is relative to the will, the three motives of the modern theories of truth are at one. To my mind they, therefore, need not remain opposed motives. Let us observe their deeper harmony, and bring them into synthesis. And then what I have called the trivialities of mere instrumentalism will appear as what they are – fragmentary hints, and transient expressions, of that will whose life is universal, whose form is absolute, and whose laws are at once those of logic, of ethics, of the unity of experience, and of whatever gives sense to life.

Tennyson, in a well-known passage of his "In Memoriam," cries:

> "Oh living Will that shalt endure
> When all that seems shall suffer shock,
> Rise in the spiritual rock,
> Flow through our deeds and make them pure."

That cry of the poet was an expression of moral and religious sentiment and aspiration; but he might have said essentially the same thing if he had chosen the form of praying: Make our deeds logical. Give our thoughts sense and unity. Give our Instrumentalism some serious unity of eternal purpose. Make our Pragmatism more than the mere passing froth of waves that break upon the beach of triviality. In any case, the poet's cry is an expression of that Absolute Pragmatism, of that Voluntarism, which recognizes all truth as the essentially eternal creation of the Will. What the poet utters is that form of Idealism which seems to me to be indicated as the common outcome of all the three motives that underlie the modern theory of truth.

ERROR AND TRUTH

Josiah Royce, "Error and Truth." *Encyclopedia of Religion and Ethics,* ed. James Hastings (New York: Charles Scribner's Sons, 1912), vol. 5, pp. 366–373.

I. Introduction.

Both in its philosophical and in its popular acceptation the word 'error' is applied to false opinions. But the popular usage also gives to the term a still wider meaning, whereby it includes not only false opinions, but numerous forms of practical failure, and of defective conduct, whose relations to conscious beliefs are by no means constant or easily discoverable. The derivation of the word illustrates the naturalness of associating the conception of false opinion with the idea of some such act as wandering, or straying, or missing the way. It seems, therefore, as if a first approach to a sharper definition of 'error' would be aided by clearly distinguishing between the practical and the theoretical applications, and then confining the philosophical use of the term, so far as possible, to theoretical errors. But we shall find it impossible to define even theoretical error without reference to some genuinely practical considerations. However much we try to avoid popular confusions, we shall be led in the end to a concept of error which can be stated only in teleological terms, and which involves the idea of action for an end, and of a certain defect in the carrying out of such action.

The present article, after distinguishing, as far as possible, the concept of theoretical errors, or of false opinions, from the popular concept of practical errors, and after stating some of the best known views regarding what a false opinion is, will seek to indicate the nature of a solution of the problem in terms of a doctrine about the relation of the cognitive to the volitional processes.

2. *Practical errors and false opinions.* – When one emphasizes the practical aspect of an error, one sometimes makes use of the more drastic word 'blunder.' A blunder is something which involves serious maladjustment, defect in conduct. Errors in the sense of blunders may be due to false opinions, or may even very largely consist of such. On the other hand, they need not involve false opinions, and *must* involve actions which do not attain their goal. These actions may be only partly voluntary; but the relation of their defective aspects to the accompanying voluntary processes is what makes us call them errors. Thus, we speak of the error or blunder of the marksman who misses his mark; of the player who fails to score, or who

permits his opponent to score when the game calls for some device for hindering the opponent from scoring. We speak of the musician's error when he sings or plays a false note. Such errors may, but often do not, result from, or accompany, false opinions or misjudgments. Thus one may fail as marksman, as player, or as musician, either through misjudgments or through defects of physical training, of temporary condition, of mood, or of attention – defects which may involve no false opinions whatsoever.

In the moral realm, the relations between such practical errors on the one hand and false opinions on the other are especially momentous and intricate. Here, in fact, the theory of moral error involves all the main problems about the relations between knowledge and action. A sin is very generally called an error. 'We have erred and strayed from thy ways like lost sheep.' The error is, first of all, practical. It has also some relation to knowledge. Yet, since sin appears to depend upon some degree of knowledge of right, the 'error' in question does not merely result from a false opinion about what one's duty is. On the other hand, that sin involves 'unwisdom,' and so does in some respect depend upon false opinions, is very generally asserted. Any careful discussion of those practical errors which have a moral significance will, therefore, show that it is no merely accidental confusion which has led us to our use of a word derived from our experience of wanderings from the right path as a term which is also to be applied to false opinions. Opinions certainly express themselves in actions; and voluntary actions are guided by opinions. The resulting relations of cognition and volition, especially in the moral world, are amongst the most complex and intimate which are known to us anywhere. They are relations which we can neither ignore nor wholly disentangle. Hence the clear separation of theoretical error and practical error, at least in the moral world, is impossible. For sin involves both theoretical and practical defects.

We can, however, make some approach to such a separation of the theoretical and practical aspects of error if we turn for aid to a very different realm, namely, formal logic. The distinction between true and false propositions involves certain well-known general relations, such as formal logic considers and analyzes. We may use these relations for what they are worth in attempting to define what a false opinion is. Having thus laid a basis for further analysis, we may attempt to clear the way through some of the more complex regions of the problem of error.

The distinction between true opinion and false opinion obviously depends upon, but also is obviously not identical with, the formal logical distinction between true and false propositions. This close relation and important difference between these two distinctions appear upon a brief study of the considerations which formal logic employs in dealing with the concepts of truth and falsity. True and false are, for the formal logician, predicates belonging to propositions, quite apart from any question as to whether

anybody believes or asserts those propositions. With regard to the predicates 'true' and 'false,' formal logic uses, upon occasion, the following well-known principles, which we may here provisionally accept as a basis for further inquiry: (1) every proposition (supposing its meaning to be precise) is either true or false, and cannot be both true and false; (2) to every proposition there corresponds a determinate proposition which is the contradictory of the first proposition; (3) the relation of contradictories is reciprocal or 'symmetrical'; (4) of two contradictory propositions, one is true and the other is false. These may be here regarded, if one chooses, merely as defining principles, explaining what one means by propositions, and how one proposes to use the logical predicates 'true' and 'false'.

Granting these purely formal principles, of which all exact reasoning processes make constant use, it is obvious that propositions taken collectively as a system constitute an ideal realm wherein to every truth there uniquely corresponds its contradictory falsity, and to every false proposition its contradictory true proposition. The realms of truth and falsity are thus formally inseparable. To know that a given proposition is false is to know that the corresponding contradictory is true, and *vice versa*. Omniscience regarding the realm of truth would, therefore, equally involve knowing true propositions as true and false propositions as false; nor could the one sort of knowledge be defined or real without the other.

But no such formal logical necessity appears to connect true opinion and error. No one can know that $2 + 2 = 4$ is true without thereby knowing that $2 + 2 \neq 4$ (that is, the contradictory of the former assertion) is false. But we can conceive of a computer who should never make any errors in computation; and such a computer might even be supposed so perfect, in the possession of some superhuman infallibility of computation, as not even to know what it would be to err in his additions. We ourselves, when we use the assertion $2 + 2 = 4$ as an example of a peculiarly obvious proposition of computation, find this bit of summation one about which it is rare or difficult for a man 'in his sober senses' to err. Yet for us the knowledge of the truth of the proposition $2 + 2 = 4$ is logically inseparable from the knowledge of the falsity of the contradictory of this proposition.

In sum, then, true and false propositions are logically inseparable. To possess a knowledge of truth is, therefore, inseparable from the possession of a knowledge of what falsity is, and of what false propositions mean. But a being can be supposed to know truth and falsity, and their distinctions and relations, without having any tendency to fall a prey to error. At all events, no purely formal logical reasons, such as for the moment concern us, can be given for supposing that a being who is capable of knowing truth should be capable of falling into error. The more concrete distinction between true opinion and error must, therefore, be different from the formal logical difference between truth and falsity. The latter may be viewed as a logically

necessary distinction between inseparable objects. The former must be due to motives or causes, and must imply mental tendencies and situations of which formal logic, taken in its deliberate abstraction from the fullness of life, gives no account.

The concept of a false opinion is thus obviously distinct from that of a false proposition, and not every true opinion requires that the corresponding false opinion should be held by somebody. It is the purpose of advancing science, of education, of the propagation of truth, to diminish and, so far as may be, 'to banish error' from the minds of men. If this purpose were somehow miraculously attained, there would be as many false propositions in the formal logician's ideal realm of truth and falsity as there ever were; but human errors would have ceased.

3. *The leading definitions of error.* – To define false opinion, hereupon, as the acceptance or the mistaking of false propositions for true ones, or of true for false ones, is a familiar device of philosophers, but it throws no light upon the real nature of error. For, to mistake a falsity for a truth, to accept a false opinion as true – what is this but simply to make a mistake, or to hold a false opinion? This supposed definition is but a tautology. Not thus is the nature of error to be clarified. Further light upon the subject can be obtained only through (1) defining more exactly the distinction between true and false propositions; and (2) showing upon what further distinctions the conception of error depends. Some of the best known efforts to accomplish this result must next be summarily stated and criticized.

(i.) *The* '*Correspondence theory of truth and falsity*' and the definitions of error based upon it deserve to be stated, because they are familiar, and because they have formed the starting-point for supplementary doctrines and definitions and for corrections. According to the view now in question, a proposition is true if it reports, or describes, or portrays 'facts as they are.' The emphasis is laid upon the 'as.' A true idea 'corresponds' in its structure to the thing, or reality, or fact of which it is a true idea; a true proposition is one which asserts that an idea does thus correspond to the facts, when it actually so corresponds. Or, again, if the account given by a proposition conforms to the structure of the facts of which it attempts to furnish an ideal portrayal, the proposition is true. Thus, a proposition may relate to the number in a real flock of sheep. In this case an idea, gained by counting the sheep, is first formed, and then the assertion is made that this numerical idea represents the real number of sheep present in the flock. The correspondence of the idea with the facts constitutes that to which the assertion is committed. If the correspondence exists, the assertion is true.

Such being (according to the 'correspondence' theory) the nature of truth, error takes place when, because of inadequate observation of the sheep, or because of some other psychological defect on the part of the one who counts, a numerical idea which does not correspond to the real number of the

sheep arises in the mind that is subject to the error; while, because of these or of still other psychological motives, the false proposition 'Such is the number of sheep,' comes to be asserted. That the correspondence does not exist makes the proposition false. That this non-existent correspondence is asserted and believed to exist constitutes the essence of the error.

In order to understand what error is, and how it arises, one therefore needs, according to this view, to analyze the nature of belief, and the motives which lead the erring mind to make assertions. From this point onwards, the definition and the theory of error have always required the consideration of various associative, affective, or volitional factors of the process of making and believing assertions – factors of which pure logic considered in its usual abstraction, can give no account. In brief, the nature of truth and falsity once having been thus defined, the nature of error depends upon some disposition to accept or to assert an untrue proposition – a disposition which cannot be due to the merely logical nature of the untruth itself, but must be referred to the prejudices, the feelings, the ignorance, the wilfulness, or the other psychological fortunes of the erring subject.

What further accounts, upon this basis, have been attempted as explanations of the essence of error, there is here no space to set forth at length. A few points must be noted. One may assert: (1) that error in such a case as the foregoing, or in the more complex cases of superstitions, supposed theological heresies, false philosophies, errors in scientific opinion, false political doctrines, etc., may be mainly due to a negative cause – the mere ignorance of the erring subject, his lack of 'adequate ideas,' the absence of correct and sufficient portrayals of fact. What a man lacks he cannot use. If he has no ideas that correspond with the facts in question, how can he make true assertions? Error is then, at least in the main (according to the view now in question), due to privation. For instance, I may not even attempt to count the sheep in the flock. I may merely guess at random. In such a case, error seems to be due merely, or mainly, to my lack of ideas. Such a negative theory of error was worked out by Spinoza, and applied by him, as far as possible, to decidedly complex cases. Naturally, according to Spinoza, 'the order and connexion of ideas' corresponds to 'the order and connexion of things.' This, for Spinoza, is the case with even the most worthless of our human imaginations. But for psycho-physical reasons, which Spinoza discusses at length, most ideas of the ordinary man, relating to his world, are extremely 'inadequate'; that is, such ideas correspond only to very fragmentary aspects of the real world. The majority of men live 'ignorant of God and of themselves and of things.' This ignorance prevents them from possessing the stock of ideas which could furnish the basis for true opinions. Men fill the void with errors. Yet none even of their errors is without basis in fact. They simply judge, without restraint, concerning that of which they know not, just because they know so little. This doctrine of error as ignorance, if accepted, would give us the

most purely and completely theoretical definition of error which has ever been offered.

Plainly, however, ignorance is not of itself error. I cannot err concerning facts of which I know so little as to have no idea whatever about them; just as I cannot, in a speech, make grammatical blunders of whose existence I have never heard. Some other factor than ignorance determines the actual acceptance and utterance of false propositions. This even Spinoza himself has in the end to recognize. In his study of the errors of human passion, he makes the mechanical associative process, and the resulting passions themselves, factors in the genesis of error. Thus we are inevitably led to further theories.

One may assert: (2) that error is due to whatever moves the will of the erring subject to make the assertions even in the absence of ideas that correspond to real objects. This volitional theory of error played a considerable part in Scholastic doctrine; was obviously useful in giving reasons for the moral condemnation of the errors of heretics, infidels, and schismatics; and has, in fact, an obvious and important basis in the psychology of opinion. Descartes recognized it in connexion with his own form of the doctrine of the freedom of the will. Spinoza, who rejected the theory of free will, and defined both intellect and will in terms of his psycho-physical theory of the associative process, still on occasion was obliged, as just pointed out, to use his own version of the doctrine of 'human bondage' as an explanation of the fatal errors into which the play of our inadequate ideas and of our passions leads us. In other forms this theory of error is widely accepted. From this point of view an error is a wilful assertion of a false proposition – an assertion made possible, indeed, by the erring subject's ignorance of the ideas that do correspond with reality, but positively determined by his willingness to assert. False beliefs are thus due to a combination of ignorance with the will to believe.

One may insist (3) that the affective processes which condition the mood called 'belief' are the principal factors in making a false proposition, when it chances to be suggested, seem plausible. Where error is propagated by social contagion, or is accepted through reverence for authority, not so much the will as the emotional life of the erring subject seems to be the factor which makes error possible. Here, according to the previous view, ignorance of ideas that do correspond with reality is a condition of error, but constitutes neither its essence nor its sufficient cause. An error, according to the present view, is a false opinion which, because of its appeal to the sentiments, the feelings, the prejudices, of the erring subject, because it is harmonious with his social interests or with his private concerns, wins the subject over to the state of mind called belief.

One may further maintain: (4) that the principal cause of error is whatever associative, perceptual, or imaginative process gives such liveliness, strength, and persistence to ideas which as a fact do not correspond with reality, that the erring subject is forced, in the absence of sufficient corrective ideas, or (to

use Taine's expression) for lack of 'reductors,' to regard these ideas as representatives of reality. Theories of error founded upon this view have played no small part in the psychiatrical literature which deals with the genesis of pathological forms of error, and have been prominent in the teachings of the Associationist school generally. From this point of view, an error is a false proposition whose assertion is forced upon the erring subject through the mechanism of association, and mainly because no other ideas than those which this assertion declares to correspond with the facts can win a place in the subject's mind when he thinks of the topic in question.

The foregoing accounts of the nature and source of error have all been stated with explicit reference to the 'correspondence' theory of truth. This theory supposes that the test of truth is the actual conformity of a representative idea with the object which it is required to portray. Idea and object are viewed as distinct and separable facts, just as a man and his portrait or photograph are possessed of a separate existence. The representative idea is external to the object. Truth depends upon a certain agreement between such mutually external facts. And, just as the idea to whose truthfulness as a representation a proposition is committed is external to its object, so, as we have now seen, the motives which lead us to error appear, in the accounts thus far given, to be external to the meaning, and to the truth or falsity, of ideas and propositions. The falsity of a proposition, so far as we have yet seen, gives no reason why the error involved in believing that proposition should be committed. The truth of a proposition, also, in no wise explains why the true proposition comes to be believed – unless, indeed, with Spinoza, one comes to accept, for metaphysical reasons, a theory that ideas are by nature in agreement with objects. In case, however, one does accept the latter theory without any limitation, then error can be defined only in negative terms as due to mere absence of ideas. Such an account of error, as we have also seen, is incapable of telling us what it is, and is inadequate to explain the most familiar facts about its occurrence.

If, then, the truth or the falsity of a proposition does not of itself explain why we come to get a true or false belief, the existence of error, for one who accepts the correspondence theory of truth has to be explained by psychological motives which are as external to the logical meanings of true and false propositions as the ideas of the correspondence theory of truth are external to their objects. Some propositions are true. Their contradictories are false. So far, we have a system of facts and relations that seems according to this account, to be wholly independent of the psychological processes of anybody. But of these true and false propositions, some are believed by men. If the propositions believed are true, we have not explicitly considered in the foregoing the psychology of the process by which they come to be believed. But, if the beliefs are beliefs in false propositions, some accounts of how the errors arise have been suggested. These accounts all appeal to motives which

do not result from the falsity of the propositions, but from the feelings, the will, or the associative processes of the erring subject – all of them influences which are due not to the logical distinctions between true and false, but to the mental fortunes of the believer.

Unfortunately, however, since the true beliefs of the subject must also have their psychology, quite as much as the false beliefs, and since the will, the feelings, the associative processes, the conditions which determine 'lively ideas,' and the like, must be equally effective when true propositions are believed as when false beliefs triumph – all the foregoing accounts leave us dissatisfied should we be led to ask: What are the processes which prevent error and give us true beliefs? For, apart from Spinoza's assumption of the universal agreement between 'the order and connexion of ideas and the order and connexion of things' – an assumption which makes error in any but a purely negative sense impossible – the truth of a proposition is a fact which in no wise explains why we mortals should come to believe that proposition to be true. And, if we explain the true belief as due to the will, the feelings, the associative or other psychological processes of the subject, these factors, as the theories of error so far stated have insisted, work as well to produce error as to beget true opinion. The one thing of which we have so far given no account is the way in which the difference between true opinion and error arises – the factor which is decisive in determining whether a given state of opinion, in a given subject, shall be one which accepts true propositions or, on the contrary, embraces error.

Of course, the need of such an account has frequently been felt by the partisans of the 'correspondence' theory of truth. Innumerable portrayals exist of the ways in which conformity of idea and object can be furthered or attained by psychological processes. Ideas can be made 'clear and distinct,' observations of the object can be rendered careful, prejudice can be kept in abeyance, feeling can be controlled, judgment can be suspended until the evidence is incontestable, and so on. By such means error can be more or less completely avoided, and agreement with the object can be progressively obtained. There is no doubt of the practical importance of such advice. There is also no doubt that the processes of control and of clarification which are in question are psychological processes, which the inquiring subject can find or produce within himself. It becomes plain, however, as one reflects, that to insist upon such matters is more or less to modify, and in the end to abandon, the representative theory of truth as consisting merely in the conformity of ideas to objects that are external to these ideas.

For how does one know, or why does one judge, that clear ideas, careful observations, the avoidance of prejudice, the suspension of judgment, and the other psychological devices of the truth-seeker, actually tend to make the subject escape from error, and win true opinion? Is it because, from some point of view external both to the object and to the ideas of the subject, one

observes how the subject gradually wins a closer conformity with his object through using the better devices, and through avoiding the mental sources of error? If so, then whoever has this point of view, external both to the object and to the cognitive process, is already somehow acquainted with the constitution of the object, and is aware what propositions are true about the object quite apart from the psychological fortunes of the poor subject, whose escape from error is to be aided by such wise counsels. As a fact, philosophers who give such counsels very often behave for the moment as if they, at least, had not to wait for a slowly acquired conformity with the nature of reality, but were already assured of their own grasp of the object, and were therefore able to give such good advice to the erring psychological subject. No purely psychological theory of the way in which a conformity to an external object can be gradually acquired through clear ideas, freedom from prejudices, and so on, can serve to explain how the critic of human truth and error has himself acquired his assumed power to see things as they are, and thus to guide the psychological subject in the right path. That sort of attainment of truth which this theory attributes to the philosopher who teaches it is just what it does not explain.

In fact, a little reflexion shows that, when we hold, as we very rightly do, that a certain wise conduct of our ideas, feelings, will, observations, processes of recording observations, and other such mental enterprises helps us towards truth, and aids us to avoid error, we are comparing, not ideas with merely external objects, so much as less coherent with more coherent, unified, clear, and far-reaching forms of experience, of cognition – in general, of insight. If we once see this fact, we have to alter our definition of truth, and herewith our definitions both of true opinion and of error.

Truth cannot mean mere conformity of idea to external object; first, because nobody can judge an idea merely by asking whether it agrees with this or with that indifferent fact, but only by asking whether it agrees with that with which the knowing subject meant or intended it to agree; secondly, because nobody can look down, as from without, upon a world of wholly external objects on the one hand, and of his ideas upon the other, and estimate, as an indifferent spectator, their agreement; and thirdly, because the cognitive process, as itself a part of life, is essentially an effort to give to life unity, self-possession, insight into its own affairs, control of its own enterprises – in a word, wholeness. Cognition does not intend merely to represent its object, but to attain, to possess, and to come into a living unity with it.

Accordingly, the theories of error which have been founded upon the 'correspondence' theory of truth must be, not simply abandoned, but modified, in the light of a richer theory of truth. A true proposition does, indeed, express a correspondence between idea and object, but it expresses much more than this.

(ii.) Another definition of truth, which has its foundation far back in the history of thought, but which has been of late revised and popularized under the names of Pragmatism, Humanism, and Instrumentalism, may next be mentioned.

According to this view, an idea is essentially something that tends to guide or to plan a mode of action. A proposition expresses the acceptance of such a mode of action, as suited to some more or less sharply defined end. Now, a mode of action inevitably leads to consequences, which arise in the experience of the active subject. These consequences may be called the 'workings' of that idea which tended to guide or to plan this mode of action. These workings may agree or disagree with the intent of the idea. If the idea agrees with its expected workings, that idea is true, and with it the proposition which accepts that idea as suited to its own ends is true; otherwise the idea and the proposition are erroneous. Such is the definition of truth which is characteristic of Pragmatism.

The case of the right or wrong counting of the flock of sheep will serve to illustrate the present theory of true opinion and of error quite as readily as to exemplify the representative theory of the same matters. A flock of sheep is not merely an external object to be portrayed. It is, to the one who counts it, an interesting object of human experience. He counts it in order to be ready to estimate his possessions, to sell or to buy the flock, to know whether he needs to hunt for lost sheep, or because of some other concrete purpose. His counting gives him an idea, perhaps of what he ought to ask of a purchaser, or of a plan for the shearing or for the market, perhaps of whether he ought to search for missing sheep. When he accepts and asserts that some determinate number represents the actual number of the flock, he, no doubt, takes interest in the correspondence between the idea and the object; yet his real object is not the indifferent external fact, but the flock of sheep as related to his own plans of action and to the practical results of these plans. The only test of the truth of his count, and, in fact, the only test that, when he counts, he proposes to accept, is that furnished by the workings of his count. Does his idea of the number of the sheep, when accepted, lead to the expected results? One of these results, in many cases, is the agreement of his own count with that made by somebody else, with whom he wishes to agree concerning a sale or some other enterprise. Or, again, he expects the enumeration which he makes at one time to agree with the result obtained at some other time when he counts the flocks anew. Furthermore, a habit of inaccurate counting betrays itself, in the long run of business, in the form of failure to get expected profits, or in the form of a loss of sheep whose straying is at one time not noticed because of inaccurate counting; while later experience shows, in the form of the experience which traces the loss, the non-correspondence of expectations and results. Such expectations, tests, and agreements define the sort of truth that is sought.

What so simple and commonplace an instance illustrates, the whole work of the natural sciences, according to the pragmatist, everywhere exemplifies. The Newtonian theory of gravitation is accepted as true because its ideas lead, through computations, to workings which agree with observation. The corpuscular theory of light was rejected because certain of its consequences did not agree with experience. The same process of testing hypotheses by a comparison of expectations with outcome can be traced throughout the entire range of empirical investigation.

As to the cause and essence of error, upon the basis of this theory of truth, there can be, according to the pragmatist, no very subtle difficulties to solve. The whole matter is, upon one side, empirical; upon the other side, practical. Experience runs its course, however it does. We, the truthseekers, are endeavouring to adjust our actions to empirical happenings by adapting our expectations, through the definition of our ideas, and through the forming and testing of our hypotheses, to the observed facts as they come. As we are always in our practical life looking to the future, and are seeking the guidance which we need for our undertakings, our propositions are hypotheses to the effect that certain ideas will, if tested, agree with certain expected workings. If the test shows that we succeed, then, just when and in so far as we succeed, our propositions prove to be then and there true. If we fail, they prove to be errors. Truth and falsity, and, consequently, true opinion and error, are not 'static' properties or fixed classifications of our ideas or of our hypotheses. Both the ideas and the propositions 'come true' or 'fail to come true' through the fluent and dynamic process of the empirical test. Thus every truth is true and every falsity false, relatively to the time when, and the purpose for which, the individual idea or hypothesis is tested.

Absolute truth or permanent truth, and equally absolute falsity or permanent falsity, are from this point of view, purely abstract and ideal predicates, useful sometimes for formal purposes when we choose to define our purposes in terms of logical or of mathematical definitions. 'Concrete' truth and error are of the nature of events, or series of events, or of 'the long run' of experience. That many of our ideas should not 'work,' or that many of our hypotheses should result in disappointed expectation is, for the pragmatist, merely an empirical fact, requiring a special explanation no more than do the marksman's missing or the player's failure to score. We are not perfectly skillful beings; experience is often too fluent or too novel for our expectations. The wonder is rather that this is not more frequently the case. That man is as skillful a player as he is of the game of ideal expectations and anticipated consequences is a matter for congratulation. But failure is as natural an event as is success.

The traditional accounts of the psychology of error mentioned above are readily accepted by Pragmatism, precisely in so far as they are indeed accounts which experience justifies. No doubt, ignorance is a source of error. We are,

in fact, ignorant of all except what experience, in one way or another, permits us upon occasion to prove by actual trial. This ignorance permits errors, in the form of false expectations, to arise. Prejudice, emotion, wilfullness, and the associative process unite to engender expectations which may prove to be false. Nor is there any known cause that uniformly assures the attainment of truth. The difference between success and failure in our adjustment to our situation is simply an empirical difference. We have to accept it as such. No deeper account can be given than experience warrants.

The result of the pragmatist's definition of error obviously forbids any sharp distinction between theoretical and practical errors. The presence or absence of conscious ideas, of definite expectations, of articulate hypotheses, remains (in case of our always more or less practically significant maladjustments of our acts to our situation) as the sole criterion for distinguishing between erroneous opinions, on the one hand, and blunders that are made, on the other hand – merely as the fumbling player may fail to get the ball, or as the nervous musician may strike the false note – blindly, and without knowing why one fails, or what false idea, if any, guided one to the failure. This reduction of all errors to the type of practical maladjustments is a characteristic feature of Pragmatism.

If the 'correspondence' theory of truth makes the distinction between true and false opinions something that is quite external to the logical distinction between true and false propositions, the pragmatist's theory of truth and error in propositions seems, on the contrary, to go as far as is possible to annul altogether the difference between these two sorts of distinctions. For the pragmatist it is merely a formal device of the logician to regard truth and error as in any sense permanent properties, or predicates of the supposed entities called propositions. What actually occurs, what empirically happens, is a series of concrete agreements and disagreements between expectations and results. These happenings or 'the long run' of such happenings, constitute all that is concretely meant by truth and error. Whether one says, 'This proposition is true or false' or 'This opinion is true or false,' the concrete fact to which one refers is the sequence of testings to which ideas are submitted when their expected workings are compared with the expectations. Since logicians like to abstract certain 'forms' from the matter of life, they may, if they choose, define the entities called true and false propositions, and then leave to the students of the concrete the study of the fortunes of mere opinions. As a fact, however, according to Pragmatism, propositions live only as opinions in process of being tested. The distinctions with which we began this discussion have their own provisional usefulness, but only as abstractions that help to prepare the way for understanding life. A proposition becomes true in the concrete when the opinion that is true leads to expected workings, and becomes false when the belief in it leads to workings which do not agree with expectations.

Such, in sum, is the pragmatist's solution of our initial problem. It emphasizes very notable facts regarding the relations between logic and life, and between thought and volition. Yet it fails to satisfy. For it can only be stated by constantly presupposing certain assertions about experience, about the order, the inter-relations, the significance, and the unity of empirical facts to be true, although their truth is never tested, in the pragmatist's sense of an empirical test, at any moment of our experience.

Thus, it has been necessary to assume, even in stating the view of Pragmatism about truth, that ideas can be formed at one time, and submitted to the test of experience at another time, and perhaps by another person, just as Newton's hypotheses were formed by him, but were tested, not only by himself, through a long course of years, but by later generations of observers. It has been necessary to assume that one can form expectations today, and compare them with facts to-morrow, or next year, or after whatever length of time the conditions make possible. But this assumption requires the truth of the proposition that the meaning, the object, the purpose, the definition of the ideas, and expectations of one moment or period of time, or person, not only can be but are identical with the meaning, object, purpose, definition of the ideas and expectations of another moment, temporal region, or person. Now such an assertion, in any one case, may be regarded with scepticism, since it is, for human beings, unverifiable. Nobody experiences, in his own person or at any one time, the identity of the ideas, meanings, expectations, of yesterday and today, of himself and of another person, of Newton and of the later students of Nature who have tested what they believe to be Newton's ideas. One may, in each special case, doubt, therefore, whether the idea formed yesterday is the same in meaning as the idea tested today, whether two men mean the same by the hypotheses which they are trying to verify together, and so on. But this much seems clear: however doubtful, in the single case, any such proposition may appear, unless some such propositions are true, there is no such process as the repeated testing of the same ideas through successive processes of experience, occurring at separate moments of time, or in the experiences of various human observers. But in that case it is not true that the proposition, 'Such a testing of ideas by the course of experience as Pragmatism presupposes actually takes place,' expresses the facts. If, however, this proposition is not true, the whole pragmatist account of truth becomes simply meaningless. On the other hand, if the proposition is true, then there is a kind of truth whose nature is inexpressible in terms of the pragmatist's definition of truth. For there are propositions which no human being at any moment of his own experience can ever test, and which are nevertheless true.

Much the same may be said of the pragmatist's assertion regarding the 'workings' that an idea is said to 'possess' or to which it is said to 'lead.' These 'workings' by hypothesis, may extend over long periods of time, may find a place in diverse minds, and may involve extremely complex reasoning

processes (e.g., computations, as in the case of the Newtonian theory of gravitation) which are very hard to follow, and which no human mind can survey, in their wholeness, at any moment, or submit to the test of any direct synthetic observation. The proposition, however, 'These are the actual, and, for the purposes of a given test, the logically relevant workings of the idea that is to be tested,' must itself be true, if the empirical comparison of any one of these workings with the facts of experience is to be of any worth as a test. The truth of the proposition just put in quotation marks is a truth of a type that no one man, at any instant, ever personally and empirically tests. In every special case it may be, and in general must be, regarded as doubtful. Yet, unless some such propositions are true, Pragmatism becomes a meaningless doctrine; while, if any such propositions are true, there is a sort of truth of which Pragmatism gives no account.

What holds of truth holds here, in general, of the conditions which make falsity possible. And the whole theory of true and false opinion, and consequently the definition of error, must be modified accordingly. In brief, Pragmatism presupposes a certain unity in the meaning and coherence of experience taken as a whole – a unity which can never at any one moment be tested by any human being. Unless the propositions which assert the existence and describe the nature of this presupposed unity are themselves true, Pragmatism has no meaning. But, if they are true, Pragmatism presupposes a sort of truth whereof it gives no adequate account. To say this is not to say that Pragmatism gives a wholly false view of the nature of truth, but is only to insist upon its inadequacy. It needs to be supplemented.

(iii.) Over against the theory of truth as the correspondence between a wholly external object and an ideal portrayal, and also in contrast with Pragmatism, there exists a theory of truth which defines that concept wholly in terms of a harmony between the partial expression of a meaning which a proposition signifies and the whole of life, of experience, or of meaning, which, according to this theory, ideas and propositions intend to embody so far as they can. A proposition is true in so far as it conforms to the meaning of the whole of experience. Such conformity can never be attained through the mere correspondence of a portrayal with an external object. It can exist only in the form of the harmonious adaptation of part to whole – an adaptation that can best be figured in the form of the adaptation of an organ to the whole of an organism.

If one reverts to the comparatively trivial instance of the sheep and the counting, the present view would insist, as Pragmatism does, upon the fact that, in counting sheep, one is attempting to adjust present ideas to the unity of an extended realm of experience, in which the observed sheep appear, now as grazing in the field, now as having their place in the herdsman's enterprises, now as passing from one ownership to another, and so on. The one who counts wants to get such a present idea of the sheep as will stand in harmo-

nious unity with all else that can be or that is known with regard to them. The truth involved in the process of counting is itself of a relatively abstract and lower sort; and hence is ill adapted to show what truth really is. For, in fact, to treat sheep merely as numerable objects is to treat them as what, on the whole, they are not; hence to say, 'They are so many,' is to utter what is in some respects false. For they are sheep, and to say this is say that each is a living organism, a unique individual, a product of ages of evolution, and a being possessing values beyond those which commerce recognizes. Hence a numerical account of them has only 'partial truth,' and therefore is false as well as true. The only wholly true account of the sheep would express (not merely portray) their character as facts in the universe of experience and of reality. One can say, at best, of the proposition about their number that it is true in so far as it expresses a view about them, which harmonizes, to the greatest extent possible for a numerical statement, with what experience, viewed as a whole, determines the place and the meaning of one's present experience of the flock of sheep to be.

Truth from this point of view is an attribute which belongs to propositions in a greater or less degree. For single propositions, taken by themselves, give us abstract accounts of facts, or rather of the whole in which every fact has its place, and from which it derives its characters. A proposition is an interpretation of the whole universe, in terms of such a partial experience of the nature of the whole as a limited group of ideas can suggest. This interpretation is always one-sided, precisely in so far as the group of ideas in question is limited. In so far as the partial view harmonizes with the whole, the proposition is true. Since the partial view, being one-sided, can never wholly harmonize with the whole, each separate proposition, if taken in its abstraction, is partially false, and needs to be amended by adding other propositions.

This general theory of truth and falsity, while its sources run back into ancient thought, is especially characteristic of modern Idealism. That the truth of propositions about experience is a character determined by their relation to the ideal and virtual whole of experience, to the 'unity of apperception,' is a thesis which forms part of Kant's 'Deduction of the Categories.' The later developments of the 'Dialectical Method,' by Fichte and Hegel, and the analogous features of Schelling's thought, led to more explicit theories of the relations between truth and falsity, and to the doctrine that every proposition, considered in its abstraction, is partially false, and needs amendment. Hegel, in the preface to his *Phänomenologie*, asserted that 'Das Wahre ist das Ganze,' and interpreted this as meaning that only what a survey of the total process of experience signifies enables us to know truth, while 'partial views,' such as we get on the way towards *absolutes Wissen*, are at once true and false – true as necessary stages on the way to insight, and therefore as in harmony with the purposes of the whole; false, as needing supplement, and as showing

this need through the contradictions which give rise to the dialectical process. In Hegel's *Logic* this view of truth is technically developed. With a different course of argument, with many original features, and with a more empirical method of investigation, a view of truth and error which belongs to the same general type has in recent times been developed by Bradley.

If one accepts such a theory of the 'degrees of truth and falsity,' and of truth as the harmony or organic unity between a partial view and the ideal whole of experience or of reality, the essence of error – that is, of false opinion must receive a new interpretation. In the history of the development of Absolute Idealism, the theory of error has taken, on the whole, two distinct forms.

(1) According to the first of these forms, usually emphasized by Hegel, error exists merely because it is of the essence of partial view to regard itself as the total and final view, precisely in so far as the partial view inevitably passes through the stage of 'abstraction,' in which it defines itself to the exclusion of all other points of view than its own. Did it not pass through this stage, it would not be a live or concrete view of things at all. It simply would not exist. But (according to Hegel) the whole, in order to be an organism at all, requires the parts to exist. And, if the parts are – as in the case of opinions – partial views of the whole, and if the whole requires them to exist, each in its place in the system of spiritual life, it is the whole itself, it is the Absolute, which requires the partial view to make, as it were, the experiment of regarding itself as true – that is, as an absolutely whole view. If a man is merely counting, he takes his objects simply as numerical; and then real things seem to him, as to the Pythagoreans, to be merely 'numbers.' Such a view, as an abstraction, is false; but as a stage on the way to insight it is inevitable; and as a concrete phase of opinion it is an error, that is, a positive belief in a falsity, or, again, a taking of a partial view for the whole. To be sure, this 'dwelling on the abstraction,' this *beharren* or *verweilen* in the midst of falsity, is a phase; and since, for Hegel (just as much as for the Pragmatists), the apprehension of truth is a living process, not a static contemplation, this phase must pass. An experience of the 'contradictions of finitude' must in its due time arise, and must lead to the recognition that the partial phase is false. This is what happens in the course of the history of thought, when the successive systems of philosophy – each a partial truth, required by the necessity of the thought-process and by the life of the *Weltgeist* to regard itself as absolutely true – succeed one another with a dialectical necessity that tends to larger and truer insight. The same sequence of necessary errors, which are all of them partial truths taking themselves to be whole and final, appears in the history of religion.

(2) To Bradley, and to others among the more recent representatives of Idealism, to whom the dialectical method of Hegel appears in various ways unsatisfactory, this account of the way in which error arises, and, as a phase of experience and of life, is necessary, does not appeal. For such thinkers,

error is, indeed defined as a partial and (in so far) false view, which is not merely partially false and partially true, but takes itself to be wholly true. The existence of such a disharmony between part and whole, in a realm of experience where the metaphysical presuppositions which these writers accept seem to require organic wholeness and harmony to prevail, and to be of the essence of reality, is an inexplicable event, which must be viewed as in some unknown way a necessary 'appearance,' not a reality.

As a statement of the ideal of truth which is alone consistent with rational demands, the Idealism thus summarized seems to be, in great measure, successful. But its success is greatest with respect to the conception of truth as the teleological harmony or adjustment of a partial to a total view of experience and of its meaning. Precisely with regard to the problem of the possibility of error, that is, of disharmony between the demands of any partial interpretation of experience and that which is revealed and fulfilled by the whole of experience, the idealistic theory of truth and of error has proved to be, thus far, most incomplete.

4. *Conditions of a solution of the problem of error.* The foregoing survey shows that a satisfactory theory of error must meet the following requirements:

(1) It must be just to whatever interest in a decisive and unquestionably 'absolute' distinction between true propositions and their contradictory false propositions is justly urged by formal logic. That is, no account of truth and error in terms of 'partial views' and 'the total view' of experience must be used to render the contrast of true and false anything but a decisive contrast, as sharp as that between any proposition and its contradictory.

(2) The theory of error must take account of the actual unity of the cognitive and volitional processes. It has been the office of recent Pragmatism to insist, in its own way, upon this unity. But Hegel, in his *Phänomenologie*, also insisted, although in another fashion, upon the fact that every insight or opinion is both theoretical and practical, is an effort at adjustment to the purposes of life, an effort to be tested by its genuine rational success or failure.

(3) The theory of error must recognize that truth is a character which belongs to propositions so far as they express the meanings which our ideas get in their relations to experience, and not in their relations to wholly external objects.

(4) That the rational test or the success of ideas, hypotheses, and opinions lies in their relations not to momentary experiences, but to the whole of life, so far as that whole is accessible, must also be maintained.

(5) The existence of error, as disharmony between the partial view which actively and, so to speak, wilfully asserts itself as the expression of the whole, must be explained as due to the same conditions as those which make possible finite life, evil, individuality, and conflict in general.

(6) Theoretical error cannot be separated from practical error.

(7) A revision of Hegel's dialectical method, a synthesis of this method with the empirical tendencies of recent Pragmatism, a combination of both with the methods of modern Logic seem, in their combination, to be required for a complete treatment of the problem of error. An error is the expression, through voluntary action, of a belief. In case of an error, a being, whose ideas have a limited scope, so interprets those ideas as to bring himself into conflict with a larger life to which he himself belongs. This life is one of experience and of action. Its whole nature determines what the erring subject, at his stage of experience, and with his ideas, ought to think and to do. He errs when he so feels, believes, acts, interprets, as to be in positive and decisive conflict with this *ought*. The conflict is at once theoretical and practical.

THE WORLD AND THE WILL

Josiah Royce. "The World and the Will." *Sources of Religious Insight* (Edinburgh: T.&T. Clark, 1912), chap. 4, sections IV–VII, pp. 135–161.

IV

Our illustrations have now prepared the way for a general review of the relations between our reason and our will. We are ready at length to ask whether any insight of reason, whether any general view of the nature and of the unity of the world or of life, could possibly be a merely theoretical insight. And if we rightly answer this question, we shall be prepared to reply to the objection that, according to the doctrine of the last lecture, the divine insight which overarches our ignorance, and which has all reality for its object, is a lifeless, or an unpractical, or a merely remote type of pure knowledge.

Our attempt to deal with this new question can best be made by taking a direct advantage of what some of you may suppose to be the most formidable of all objections to the whole argument of the last lecture. In my sketch of a philosophy of the reason, I have so far deliberately avoided mentioning what many of you will have had in mind as you have listened to me, namely, that doctrine about our knowledge, and about truth, and about our mode of access to truth, which to-day goes by the name of Pragmatism. Here we have to do, once more, with some of the favorite theses of James's later years. We have also to do with a view with which my present audience is likely to be familiar, at least so far as concerns both the name pragmatism and the best-known fundamental theses of the pragmatist. For I speak in the immediate neighborhood of one of the most famous strongholds of the recent pragmatic movement. I can give but a comparatively small portion of our limited time to the task of explaining to you how I view those aspects of pragmatism which here concern our enterprise. Yet this summary discussion will go far, I hope, to show how I view the relations between the reason and the will, and in how far our will also seems to me to be a source of religious insight.

That human knowledge is confined to the range furnished by human experience, and cannot be used to transcend that experience, is an opinion widely represented in all modern discussion, and especially in the most recent times. My own account of the insight which I refer to the reason depends not upon simply ignoring this general doctrine about the limitations of our human knowledge, but upon an effort to get a rational view of what it is that

we mean by human experience. My result, as I have stated it, may have seemed paradoxical; and I am far from supposing that my brief sketch could remove this paradoxical seeming, or could answer all objections. My thesis is essentially this, that you cannot rationally conceive what human experience is, and means, except by regarding it as the fragment of an experience that is infinitely richer than ours, and that possesses a world-embracing unity and completeness of constitution. My argument for this thesis has been dependent on an assertion about the sense in which any opinion whatever can be either true or false, and upon a doctrine regarding that insight to which we appeal whenever we make any significant assertion.

Now this argument will seem to some of you to have been wholly set aside by that account of the nature of judgments, of assertions, and of their truth or falsity, which pragmatism has recently maintained. A new definition of truth, you will say – or, an old definition revived and revised; a new clearness also as to the ancient issues of philosophy; an equally novel recent assimilation of philosophical methods to those that have long been prominent in natural science – these things have combined, at the present moment, to render the Platonic tradition in philosophy and the laborious deductions of Kant, as well as the speculations of the post-Kantian idealists, no longer interesting. I ought, you may insist, to have taken note of this fact before presenting my now antiquated version of the idealistic doctrine of the reason. I ought to have considered fairly the pragmatist's theory of truth. I should then have seen that our human experience may safely be left and must rationally be left, to fight its own way to salvation without any aid from the idea of a universal or all-embracing or divine insight.

How does pragmatism view the very problem about the truth and error of our human opinions which has led me to such far-reaching consequences? For the first, it is the boast of pragmatists that they deal, by preference, with what they call "concrete situations," and our "concrete situation" as human beings dealing with reality is, as they maintain, something much more readily comprehensible than is the idealistic theory of a divine insight. Truth and error are characters that belong to our assertions for reasons which need no overarching heavenly insight to make them clear. In brief, as the pragmatists tell us, the story of the nature of truth and of error is this:

An assertion, a judgment, is always an active attitude of a man, whereby, at the moment when he makes this assertion he directs the course of his further activities. To say "My best way out of the woods lies in that direction" is, for a wanderer lost in the forest, simply to point out a rule or plan of action and to expect certain results from following out that plan. This illustration of the man in the woods is due to James. An analogous principle, according to pragmatism, holds for any assertion. To judge is to expect some concrete consequence to follow from some form of activity. An assertion has meaning only in so far as it refers to some object that can be defined in empirical terms

and that can be subjected to further direct or indirect tests, whereby its relations to our own activities can become determinate. Thus, then, a judgment, an opinion, if it means anything concrete, is always an appeal to more or less accessible human experience – and is not, as I have been asserting, an appeal to an overarching higher insight. When you make any significant assertion, you appeal to whatever concrete human observations, experiments, or other findings of data, actual or possible, can furnish the test that the opinion calls for. If I assert: "It will rain to-morrow," the assertion is to be verified or refuted by the experience of men just as they live, from moment to moment.

It remains to define, a little more precisely, wherein consists this empirical verification or refutation for which a human opinion calls. An opinion is a definite one, as has just been said, because it guides the will of the person who holds the opinion to some definite course of action. An opinion then, if sincere and significant, has *consequences*, leads to deeds, modifies conduct, and is thus the source of the experiences which one gets as a result of holding that opinion and of acting upon it. In brief, an opinion has what the pragmatists love to call its "*workings*." Now when the workings of a given opinion, the empirical results to which, through our actions, it leads, agree with the expectations of the one who holds the opinion, the opinion is to be called true. Or, in the now well-known phrase, "An idea (or opinion) is true if it works." To use the repeated example of Professor Moore, an opinion that a certain toothache is due to a condition present in a given tooth is true, when an operation performed upon that tooth, and performed as a consequence of that opinion, and with the expectation of curing the toothache works as expected. For the operation is itself one of the workings of the opinion in question.

To assert an opinion, then, is not to appeal to an essentially superior insight, but is to appeal to the workings that follow from this opinion when you act upon it in concrete life. No other sort of truth is knowable.

A consequence of these views, often insisted upon by pragmatists, is that truth is relative to the various "concrete situations" which arise; so that absolute or final truth is indefinable by us mortals. Hence an opinion may be true for a given purpose, or in one situation (because in that situation its workings prove to be as expected), although it is relatively false when applied to some other situation, or to some wider range of experience. Absolute truth is as unobservable by us in our experience as is absolute position or absolute motion in the physical world. Every truth is definable with reference to somebody's intentions, actions, and successes or failures. These things change from person to person, from time to time, from plan to plan. What is true from the point of view of my plans need not be so from your point of view. The workings of an opinion vary in their significance with the expectations of those concerned. Truth absolute is at best a mere ideal, which for us throws no light upon the nature of the real world.

Thus, at a stroke, pragmatism, as understood by its chief representatives at the present time, is supposed to make naught of the subtle, and, as the pragmatists say, airy and fantastic considerations upon which my sketch of a philosophical idealism at the last lecture depended. Truth, they insist, is a perfectly human and for us mortals not in the least a supernatural affair. We test it as we can, by following the experienced workings to which our ideas lead. If these workings are what we meant them to be, our opinions are just in so far proven true. If no human and empirical tests of the workings of an opinion are accessible to us, the opinion remains in so far meaningless. If concrete tests lead to workings that disappoint our human expectations, our opinions are in so far false. Moreover (and upon this all the pragmatists lay great stress), truth is for us a temporal affair. It changes, it flows, it grows, it decays. It can be made eternal only by tying ourselves, for a given purpose, to abstract ideas which we arbitrarily require to remain, like mathematical definitions, unchanged. Even such ideas have no sense apart from the uses to which they can be put. Concrete truth grows or diminishes as our successes in controlling our experience, through acting upon our beliefs, wax or wane.. Truth is subject to all the processes of the evolution of our concrete lives. The eternal is nothing that can be for us a live presence. What we deal with is, like ourselves, fluent, subject to growth and decay, dynamic, and never static. The pragmatist recoils with a certain mixture of horror and amusement from the conception of an all-inclusive divine insight. That, he says, would be something static. Its world of absolute reality would be a "block universe" and itself merely an aspect of a part, or perhaps the whole, of just this block. Its supposed truth would be static like itself, and therefore dead.

But does pragmatism forbid us to have religious insight? No; James, in ways which you have repeatedly heard me mention, insists that pragmatism leaves open ample room for what he thinks to be the best sort of religion, namely, for a religion suited to what he calls the "dramatic temper" of mind. Truth, so far as we men can attain to it, has indeed to be human enough. But nothing forbids us to entertain the belief that there are superhuman and supernatural realities, forms of being, living and spiritual personalities, or super personalities, as various and lofty as you please, provided only that they be such as to make whatever evidence of their being is accessible to us capable of definition in a human and empirical way. The truth, namely, of our belief about such beings, has to be tested by us in terms of our own concrete religious experience. Such beliefs, like others, must "work" in order to be true. That is, these beliefs, however they arise, must lead to conduct; and the results of this conduct must tend to our religious comfort, to our unity of feeling, to our peace, or power, or saintliness, or other form of spiritual perfection. The fruits of the spirit are the empirical tests of a religious doctrine; and, apart from those uprushes of faith from the subconscious whereof we have spoken in previous lectures, there are for James no other tests of the truth

of religious convictions than these. The truth of religion consists in its successful "workings."

Hence, however, religion depends upon an ever-renewed testing of its opinions through a carrying of them out in life. Insight would be barren were it not quickened and applied through our will. To James, as we already know, reason, as such, seems to be of little use in religion. But action, resolute living, testing of your faith through your works and through its own workings, this is religion – an endlessly restless and dramatic process, never a union with any absolute attainment of the goal.

V

Now in what way can I hope, you may ask, to answer these impressive and to many recent writers decisive considerations of the pragmatists? My answer, like my foregoing statement of my own form of idealism, depends upon extremely simple considerations. Their interest for our discussion lies in the fact that they have to do with the relation between reason and action, and between the real world and the human will. As a fact, the will as well as the reason is a source of religious insight. No truth is a saving truth – yes, no truth is a truth at all unless it guides and directs life. Therein I heartily agree with current pragmatism and with James himself. On the other hand, the will is a collection of restless caprices unless it is unified by a rational ideal. And no truth can have any workings at all, without even thereby showing itself to be, just in so far as it actually works, an eternal truth. And, furthermore, what I have asserted about the insight which the reason gives us is so far from being opposed to the pragmatist's facts, that every rational consideration of the type of truth which they define leads us back to the consideration of absolute truth and to the assertion of an all-inclusive insight. Only, when we view this all-inclusive insight from the point of view which the pragmatists now emphasize (and which I myself have emphasized from a period long antedating the recent pragmatist movement), such a fair estimate of the insight of reason transforms our first and superficial opinion of its nature and of its meaning. It becomes the insight of a rational will, whose expression is the world, and whose life is that in which we too live and move and have our being.

Let me briefly dwell on each of the considerations which I here have in mind. To me, as a philosophical student, they are not new; for, as I repeat, I insisted upon them years ago, before the modern pragmatist controversy began.

First, then, there are certain respects in which I fully agree with recent pragmatism. I agree that every opinion expresses an attitude of the will, preparedness for action, a determination to guide a plan of action in accordance with an idea. Whoever asserts anything about the way out of the woods, or about the cause and possible cure of a toothache, defines a course

of action in accordance with some purpose, and amongst other things predicts the possible outcome of that course of action. The outcome that he predicts is defined in terms of experience, and, so far as that is possible, in terms of human experience. And now this is true, not only of assertions or opinions about toothaches. It is true also of assertions about all objects in heaven or earth. There is no such thing as a purely intellectual form of assertion which has no element of action about it. An opinion is a deed. It is a deed intended to guide other deeds. It proposes to have what the pragmatists call "workings." That is, it undertakes to guide the life of the one who asserts the opinion. In that sense, all truth is practical. If you assert a proposition in mathematics, you propose to guide the computations, or other synthetic processes, of whoever is interested in certain mathematical objects. If you say "There is a God," and know what you mean by the term "God," you lay down some sort of rule for such forms of action as involve a fitting acknowledgment of God's being and significance. So far, then, I wholly side with the pragmatists. There is no pure intellect. There is no genuine insight which does not also exist as a guide to some sort of action.

Furthermore, the proper "workings" of an assertion, the rational results of the application of this opinion to life, must, if the assertion is true, agree with the expectations of the one who defines the assertion. And these "workings" belong, indeed, to the realm of actual and concrete experience, be this experience wholly human, or be it, in some respect, an experience which is higher and richer than any merely human experience. Opinions are active appeals to real life – a life to which we are always seeking to adjust ourselves, and in which we are always looking to find our place. The quest for salvation itself is such an effort to adjust our own life to the world's life. And if the world's life finds our efforts to define our relation to the world's actual and perfectly concrete experience inadequate, then our assertions are in just so far false; they lead in that case to blundering actions. We fail. And in such cases our opinions, indeed, "do not work."

All this I myself insist upon. But next I ask you to note that the very significance of our human life depends upon the fact that we are always undertaking to adjust ourselves to a life, and to a type of experience, which, concrete and real though it is, is never reducible to the terms of any purely human experience. Were this not the case; were not every significant assertion concerned with a type and form of life and of experience which no man ever gets; were not all our actions guided by ideas and ideals that can never be adequately expressed in simply human terms; were all this, I say, not the case, then – neither science nor religion, neither worldly prudence nor ideal morality, neither natural common-sense nor the loftiest forms of spirituality would be possible. Here I can only repeat, but now with explicit reference to the active aspect of our opinions and of our experience, the comments that I made in my former lecture. Man as he is experiences from moment to

moment. What is here and now, not future "workings," not past expectations, but the present – this is what he more immediately gets and verifies. These momentary experiences of his, these pains and these data of perception, are what he can personally verify for himself. And to this life in each instant he is confined, so far as his own personal and individual experience is concerned. But man *means*, he *intends*, he *estimates*, he *judges* life, not as it appears to him at any one instant, but as "in the long run," or "for the common-sense of mankind," or as "from a rational point of view" he holds that it ought to be judged. Now I again insist – there is not one of us who ever directly observes in his own person what it is which even the so-called common-sense of mankind is said to verify and find to be true. The experience which "mankind" is said to possess is not merely the mere collection of your momentary feelings or perceptions, or mine. It is a conceived integral experience which no individual man ever gets before him. When we conceive it, we first treat it as something impersonal. If it is personal, the person who gets it before him is greater than any man. Yet unless some such integral experience is as concrete and genuine a fact, as real a life, as any life that you and I from moment to moment lead, then all so-called "common-sense" is meaningless. But if such an integral experience is real, then that by which the pragmatic "workings" of our private and personal opinions are to be tested and are tested is a certain integral whole of life in which we all live and move and have our being, but which is no more the mere heap and collection of our moments of fragmentary experience, and of our vicissitudes of shifting moods, than a symphony is a mere collection of notes on paper, or of scraped strings and quivering tubes, or of air waves, or even of the deeds of separate musicians.

The life, then, the experience, the concrete whole, wherein our assertions have their workings, with which our active ideas are laboring to agree, to which our will endlessly strives to adjust itself, in which we are saved or lost, is a life whose touch with our efforts is as close as its superiority to our merely human narrowness is concretely and actively triumphant whenever our pettiness gets molded to a higher reasonableness. And unless such a life above our individual level is real, our human efforts have no sense whatever, and chaos drowns out the meaning of the pragmatists and of the idealists alike. *If one asks, however, by what workings our significant assertions propose to be judged, I answer, by their workings as experienced and estimated from the point of view of such a larger life, as conforming to its will, or falling short thereof, as leading toward or away from our salvation.* For it is just such a larger life by which we all propose and intend to be judged, whenever we make our active appeal to life take the form of any serious assertion whatever. If a man proposes to let his ideas be tested not by his momentary caprice, and not by any momentary datum of experience, but by "what proves to be their workings in the long run," then already he is

appealing to an essentially superhuman type of empirical test and estimate. For no man taken as this individual ever personally experiences "the long run," that is, the integral course and meaning, the right estimate and working of a long series of experiences and deeds. For a man individually observes now this moment and now that – never their presupposed integration, never their union in a single whole of significant life.

If a man says that the workings of his ideas are to be tested by "scientific experience," then again he appeals not to the verdict of any human observer, but to the integrated and universalized and relatively impersonal and super-personal synthesis of the results of countless observers.

And so, whatever you regard as a genuine test of the workings of your ideas is some living whole of experience above the level of any one of our individual human lives. To this whole you indeed actively appeal. The appeal is an act of will. And in turn you regard that to which you appeal as an experience which is just as live and concrete as your own, and which carries out its own will in that it snubs or welcomes your efforts with a will as hearty as is your own. For what estimates your deeds, and gives them their meaning, is a life as genuine as yours and an activity as real as yours. Pragmatism is perfectly justified in regarding the whole process as no mere contemplation, no merely restful or static conformity of passive idea to motionless insight, but, on the contrary, as a significant interaction of life with life and of will with will. But the more vital the process, the more pragmatic the test of our active opinions through the conformity or non-conformity of their purposes to the life wherein we dwell and have our being, the more vital becomes the fact that, whether we are saved or lost, we belong to the world's life, and are part thereof, while, unless this life is more than merely human in its rational wealth of concrete meaning, we mortals have no meaning whatever, and the assertions of common-sense as well as of religion lapse into absurdity.

VI

In order fairly to estimate aright our relation to this larger life, we must briefly review the further thesis upon which recent pragmatism lays so much stress – the thesis that, since the truth of an opinion consists in the agreement or disagreement of its empirical workings with their anticipated consequences, all truth is both temporal and relative and cannot be either eternal or absolute. Let me then say a word as to the absoluteness of truth.

The thesis of pragmatism as to the active nature and the practical meaning of all opinions may be illustrated by a simile that, as I think, well brings out the sense in which, as I hold, pragmatism itself is a true doctrine. Any sincere opinion announces a plan of action whereby we are, in some way, to adjust ourselves for some purpose to a real object. That is, an opinion lays down, in some form, a rule for some sort of conduct. This rule is of course valid only

for one who has some specific interest in the object in question. For you can guide action only by appealing to the will of the one whom you guide. This is the pragmatist's view of the nature of all assertions and opinions. And so far, as you already know, I agree with the pragmatist. This account is correct.

This being so, we can, for the sake of a simile, compare any definite opinion to the counsel that a coach may give to a player whom he is directing. The player wants to play the game." He therefore accepts its rules, and has his interests in what the pragmatists call "the concrete situation." The player, at any point in his training or in his activities as a player, may also accept the coach's guidance, and put himself under the coach's directions. If, hereupon, the player acts in accordance with what the coach ordains, the coach's directions have "workings." Their "workings" are in so far the deeds of the player. These deeds, if the issues of the game are sharply defined, are what we may call hits or misses. That is, each one of them either is what, for the purposes of the game and the player, it ought to be, or else it is not what it ought to be. And each act of the player is a hit or a miss in a perfectly objective sense, as a real deed belonging to a world whose relations are determined by the rules and events of the game and by the purposes of the whole body of players.

Applying the simile to the case of assertions, we may say: An assertion is an act whereby our deeds are provided with a sort of coaching. Life itself is our game. Opinions coach the active will as to how to do its deed. If the opinion is definite enough, and if the active will obeys the coach, the opinion has "workings." These workings are our intelligent deeds, which translate our opinions into new life. If our purposes are definite enough, and if the issues of life are for us sharply defined, these deeds are, with reference to our purposes, either hits or misses, either successful or unsuccessful acts, either steps toward winning or steps toward failure. All this is surely concrete enough. And, in real life, this account applies equally to the practical situations of the workshop or of the market-place, and to the ideas and deeds of a religious man seeking salvation.

But now one of the central facts about life is that every deed once done is *ipso facto* irrevocable. That is, at any moment you perform a given deed or you do not. If you perform it, it is done and cannot be undone. This difference between what is done and what is left undone is, in the real and empirical world, a *perfectly absolute difference*. The opportunity for a given individual deed returns not; for the moment when that individual deed can be done never recurs. Here is a case where the rational constitution of the whole universe gets into definite relation to our momentary experience. *And if any one wants to be in touch with the "Absolute" – with that reality which the pragmatists fancy to be peculiarly remote and abstract – let him simply do any individual deed whatever and then try to undo that deed. Let the experiment teach him what one means by calling reality absolute. Let the truths which*

that experience teaches any rational being show him also what is meant by absolute truth.

For this irrevocable and absolute character of the deed, when once done, rationally determines an equally irrevocable character about the truth or falsity of any act of judgment, of any assertion or opinion, which has actually called in a concrete situation for a given deed, and which therefore has had this individual deed for any part of its intended "workings." Let us return to the simile of the game. Suppose the coach to counsel a given deed of the player. Suppose the player, acting on the coach's advice, to perform that deed, to make that play. Suppose the play to be a misplay. The play, once made, cannot be recalled. It stands, if the rules of the game require it so to stand, on the score. If it stands there, then just *that* item of the score can never be changed under the rules of the game. The score is, for the game, absolute and irrevocable. If the coach counseled that misplay, his counsel was an error. And just as the player's score cannot be changed without simply abandoning the rules of the game, so too the coach's record as a blunderer is, in respect of this one bit of counsel, unalterable. Analogous results hold for the player's successful hits and for the coaching that required them. All this is no result of abstractions or of bare theory. It is the result of having the will to play the game. It is the absolute truth that results from joining definite practical issues.

Returning to life, we must say: If our assertions have a determinate meaning, they get their concrete workings through counseling determinate individual deeds. Each deed, as an individual act, is irrevocable and is absolutely what it is. Our deeds, judged in the light of a reasonable survey of life – a survey of life such as that to which, when we form our opinions, and when we act on our opinions, we intend to appeal – are, for a determinate purpose, either hits or misses. If the issues of life in question when we act are definite enough, our deeds, under the rules of the game of life, cannot avoid this character of being the right deeds or the wrong deeds for the purpose in question and in view of their actual place in real life. Whoever so acts that his deeds are done, as a cant phrase has it, "with a string attached to them" – that is, whoever regards his deeds as having only relative reality, as capable of being recalled if he chooses, is not acting seriously. He is not, as they say, really "playing the game." And, as a fact, he is trifling with absolute reality. He is not only not serious; he views real life as it absolutely is not. For whatever individual deed he actually does is absolutely irrevocable, whether, he wants to recall it or not. Once done, it stands eternally on the world's score.

Now I insist, whatever assertion, or opinion, regarded as itself an expression of one's will, has for its intended working one of these irrevocable deeds, is in so far forth true, as the individual deed which it counsels is for the required purpose quite irrevocably a right deed when estimated with reference to this purpose and to the life into whose score it enters. That is, the opinion is true

in so far as the working which it counsels is a deed that is in fact a hit in the chosen game of life under the rules of that game. And whatever opinion counsels a deed that, as the working of this opinion, is a miss in the game of life, is a false opinion. And, so I insist, *this distinction between the truth and falsity of an opinion that counsels an individual deed is as absolute and irrevocable as is the place of the deed when once done on the score of the game of life.*

Whoever denies this position simply trifles with the very nature of all individual facts of experience; trifles also with life and with his own decisive will. Every serious man does his daily business with an assurance that, since his deeds are irrevocable, his guiding opinions, that counsel his individual deeds give, in an equally irrevocable way, right or wrong guidance, precisely in so far as they get their workings concretely presented in his deeds. And this view about life is no philosopher's abstraction. It is the only genuinely concrete view. Its contradiction is not merely illogical, but practically inane. I cannot do a deed and then undo it. Therefore I cannot declare it to be for a determinate purpose the right individual deed at this point in life, and then say that I did not really mean that counsel to be taken as simply and therefore absolutely true. Absolute reality (namely, the sort of reality that belongs to irrevocable deeds), absolute truth (namely, the sort of truth that belongs to those opinions which, for a given purpose, counsel individual deeds, when the deeds in fact meet the purpose for which they were intended) – these two are not remote affairs invented by philosophers for the sake of "barren intellectualism." *Such absolute reality and absolute truth are the most concrete and practical and familiar of matters.* The pragmatist who denies that there is any absolute truth accessible has never rightly considered the very most characteristic feature of the reasonable will, namely, that it is always counseling irrevocable deeds, and therefore is always giving counsel that is for its own determinate purpose irrevocably right or wrong precisely in so far as it is definite counsel.

One of the least encouraging features of recent discussion is the prominence and popularity of those philosophical opinions which are always proclaiming their "concrete" and "practical" character, while ignoring the most vital and concrete feature of all voluntary life. For the very essence of the will is that, at every moment of action, it decides absolute issues, because it does irrevocable deeds, and therefore, if intelligent at all, is guided by opinions that are as absolutely true or false as their intended workings are irrevocable. I repeat: If you want to know what an absolute truth is, and what an absolute falsity, do anything whatever, and then try to undo your deed. You will find that the opinion which should counsel you to regard it as capable of being undone gives you simply and absolutely false coaching as to any game of life whatever. Every effort to undo your deed is a blunder. Every opinion that you can undo is a trivial and absolutely false absurdity. Just such triviality and

absurdity belong to the thesis that absolute truth is an unpractical and inaccessible abstraction.

VII

If, with such a view of the nature of absolute truth, we turn back to estimate the sense in which our opinions about the world as a whole can be true or false, we now see that our account both of the insight of the reason, and of the nature of the world, has become enriched by this whole analysis of the nature of opinion. *Opinions about the universe are counsels as to how to adjust your deeds to the purposes and requirements which a survey of the whole of the life whereto your life belongs shows to be the genuinely rational purposes and requirements.* Every such opinion then, whether true or false, is an effort to adjust your will and your conduct to the intents of a supreme will which decides values, establishes the rule of life, and estimates purposes in the light of complete insight. That is, the insight to which your opinions appeal is indeed the insight of a real being who values, estimates, establishes, decides, as concretely as you do, and who is therefore not only all-wise, but possessed of a will. Your search for salvation is a seeking to adjust yourself to this supreme will. That such a will is real is as true as it is true that any opinion whatever which you can form with regard to the real world is either true or false. However ignorant you are, you are, then, in constant touch with the master of life; for you are constantly doing irrevocable deeds whose final value, whose actual and total success or failure, can only be real, or be known, from the point of view of the insight that faces the whole of real life, and with reference to the purposes of the will whose expression is the entire universe.

If, however, you say, with the pragmatists: "There is no whole world, there is no complete view, there is no will that wills the world; for all is temporal, and time flows, and novelties constantly appear, and the world is just now incomplete, and therefore there is nothing eternal," then my answer is perfectly definite. Of course there is, *just at this point of time*, no complete world. Of course, every new deed introduces novelties into the temporal world. But, on the other hand, even to assert this is to assert *that the future, and in fact all the future, in all its individual detail, belongs to reality, and forms part of its wholeness.* To admit this is to admit that the true insight, and the divine will, require, and get, *the endless whole of future time, as well as of past time, before them in one, not timeless, but time-inclusive survey, which embraces the whole of real life.* And just such a survey, and just such a life, not timeless, but time-inclusive, constitute the eternal, which is real, not apart from time, and from our lives, but in, and through and above all our individual lives. The divine will wills in us and in this entire world, with its endless past and its endless future, at once. The divine insight is not lifeless.

It includes and surveys all life. All is temporal in its ceaseless flow and in its sequence of individual deeds. All is eternal in the unity of its meaning.

To assert this, I insist, is not to deny our freedom and our initiative. The divine will wills me, precisely in so far as it wills that, in each of my individual deeds, I should then and there express my own unique, and in so far free, choice. And to assert, as I do, that the divine will wills all "at once" is not to assert that it wills all *at any one moment of time*, but only that the divine will is expressed in the totality of its deeds that are done in all moments of time.

But this, you will say, is still philosophy, not what the plain man needs for his religion. The question remains: Through what source of insight are we able to adjust our daily lives to this divine wisdom and to this divine will? I answer: Through a source of insight which is accessible to the plainest and simplest reasonable and sincere human being. Yet this source of insight, not yet expressly named in our study, includes in a beautiful and spiritual unity the true sense of our individual experience, of our social experience, of our reason, and of our will, and gives us at length a genuine religion. This new source we are to study in our next lecture.

THE WILL TO INTERPRET

"The Will to Interpret." *The Problem of Christianity* (New York: Macmillan, 1913), vol. 2, chap. 12, pp. 167–221.

We have seen some of the contrasts whereby the three cognitive processes: Perception, Conception, and Interpretation, are distinguished from one another. Our next task is to become better acquainted with the work and the value of Interpretation.

I

In this undertaking we shall be guided by the special problems to which our lectures are devoted. The metaphysical inquiry concerning the nature and the reality of the community is still our leading topic. To this topic whatever we shall have to say about interpretation is everywhere subordinate. But, since, if I am right, interpretation is indeed a fundamental cognitive process, we shall need still further to illustrate its nature and its principal forms. Every apparent digression from our main path will quickly lead us back to our central issues. Interpretation is, once for all, the main business of philosophy.

The present lecture will include two stages of movement towards our goal. First, we shall study the elementary psychology of the process of interpretation. Secondly, we shall portray the ideal that guides a truth-loving interpreter. The first of these inquiries will concern topics which are both familiar and neglected. The second part of our lecture will throw light upon the ethical problems with which our study of the Christian ideas has made us acquainted. At the close of the lecture our preparation for an outline of the metaphysics of interpretation will be completed.

II

I have called interpretation an essentially social cognitive process; and such, in fact, it is. Man is an animal that interprets; and therefore man lives in communities, and depends upon them for insight and for salvation.

But the elementary psychological forms in which interpretation appears find a place in our lives whether or no we are in company; just as a child can sing when alone, although singing is, on the whole, a social activity. We

shall need to consider how an interpreter conducts his mental processes, even when he is taking no explicit account of other minds than his own.

In looking for the psychological foundations of interpretation, we shall be directed by Charles Peirce's formal definition of the mental functions which are involved. Wherever an interpretation takes place, however little it seems to be an explicitly social undertaking, a triadic cognitive process can be observed. Let us look, then, for elementary instances of such triadic processes.

In the earliest of the logical essays to which, at the last time, I referred, Charles Peirce pointed out that every instance of conscious and explicit Comparison involves an elementary form of interpretation. This observation of Peirce's enables us to study interpretation in some of its simplest shapes, relieved of the complications which our social efforts to communicate with other minds usually involve.

Yet, even in this rudimentary form, interpretation involves the motives which, upon higher levels, make its work so wealthy in results, and so significant in its contrasts with perception and conception.

III

The most familiar instances of the mental process known as Comparison seem, at first sight, to consist of a consciousness of certain familiar dyadic relations, – relations of similarity and difference. Red contrasts with green; sound breaks in upon silence; one sensory quality collides, as it were, with another. The "shock of difference" awakens our attention. In other cases, an unexpected similarity of colors and tones attracts our interest. Or perhaps the odors of two flowers, or the flavors of two fruits, resemble one the other. Pairs of perceived objects are, in all these cases, in question. We express our observations in such judgments as: "A resembles B"; "D is unlike E."

Now Peirce's view of the nature of comparison depends upon noticing that, familiar as such observations of similarity and dissimilarity may be, no one of them constitutes the whole of any complete act of comparison. Comparison, in the fuller sense of the word, takes place when one asks or answers the question: What constitutes the difference between A and B?" "*Wherein* does A resemble B?" "*Wherein* consists their distinction?" Let me first illustrate such a question in a case wherein the answer is easy.

If you write a word with your own hand, and hold it up before a mirror, your own handwriting becomes more or less unintelligible to you, unless you are already accustomed to read or to write mirror-script. Suppose, however, that instead of writing words yourself, you let some one else show you words already written. And suppose, further, that two words have been written side by side on the same sheet of paper, neither of them by your own hand. Suppose one of them to have been written upright, while the other is the counterpart of the first, except that it is the first turned upside down, or else

is the first in mirror-script. If, without knowing how these words have been produced, you look at them, you can directly observe that the two written words differ in appearance, and that they also have a close resemblance. But, unless you were already familiar with the results of inverting a handwriting or of observing it in a mirror, you could not thus directly observe wherein consist the similarities and the differences of the two words which lie before you on the paper.

Since you are actually familiar with mirror-script, and with the results of turning a sheet of paper upside down, you will indeed no doubt be able to name the difference of the two supposed words. But in order to compare the two words thus presented side by side on the same sheet of paper, and to tell wherein they are similar and wherein they differ, you need what Peirce calls a mediating idea, or what he also calls "a third," which, as he phrases the matter, shall "represent" or "interpret" one of the two written words to, or in terms of, the other. You use such a "third" idea when you say, "This word is the mirror-script representative of that word." For now the difference is interpreted.

Thus a complete act of comparison involves such a "third," such a "mediating" image or idea, – such an "interpreter." By means of this "third" you so compare a "first" object with a "second" as to make clear to yourself wherein consists the similarity and the difference between the second and the first. Comparison must be triadic in order to be both explicit and complete. Likenesses and differences are the signs that a comparison is needed. But these signs are not their own interpretation.

Let us observe another instance of the same general type. One may be long acquainted with the difference between his own right and left hands before one learns to interpret this difference, and so to complete one's comparison, in terms of the third idea that the one hand is a more or less imperfect mirror-image of the other hand, the imperfections being due to the lack of symmetry in our bodily structure.

Still another familiar instance of comparison will show how needful it is to choose the right "third" in order to complete one's view of the matter. One may long have observed that a friend's face, when seen in a mirror, contrasts with the same face if seen apart from the mirror. Yet it may be very hard for a given person to tell why this difference exists, or wherein it consists. I have asked the question of various intelligent and observant people, who could only reply: "It is true that in general a man's face, as I see it before me, does not perfectly resemble that man's face as it appears when I look at it in a mirror. But I cannot define the reason for this difference, or tell wherein the difference consists." The answer to the question is that, since the features of a human face are usually, in their finer details, more or less unsymmetrically disposed with reference to the vertical axis of the body, the mirror picture, even of a fairly regular countenance, must be altered to suit these vertical asymmetries.

The idea of the vertical asymmetries is here the needed "third" which interprets the difference between the man's face when seen in the mirror and when seen out of the mirror.

A lady who had passed part of her life in Australia, and part in England, once told me that, for years, she had never been able to understand the difference which, to her eyes, existed between the full moon as seen in England and as observed by her during her years in Australia. At last she found the right mediating idea, when she came to notice how Orion also gradually became partially inverted during her journeys from English latitudes to those of the far southern seas. For the full moon, as she thus came to know, must be subject to similar apparent inversions; and this was the reason why the "man in the moon" had therefore been undiscoverable when she had heretofore looked for him in Australian skies.

IV

When processes of comparison grow complicated, new "third" terms or "mediators" may be needed at each stage of one's undertaking. So it is when a literary parallel between two poets or two statesmen is in question. Now one and now another trait or event or fortune or deed may stand out as the mediating idea. But always, in such parallels, it is by means of the use of a "third" that each act of comparison is made possible, – whether the case in question be simple or complex. And the mediator plays each time the part which Peirce first formally defined.

Let there arise the problem of drawing a literary parallel between Shakespeare and Dante. The task appears hopelessly complex and indeterminate until, perhaps, the place which the sonnet occupied in the creative activity of each poet comes to our minds. Then indeed, although the undertaking is still vastly complicated, it is no longer quite so hopeless. If "with this key Shakespeare unlocked his heart," yet held fast its deepest mysteries; while Dante accompanied each of the sonnets of the *Vita Nuova* with a comment and an explanation, yet left unspoken what most fascinates us in the supernatural figure of his beloved, – then "the sonnet," viewed as an idea of a poetical form, mediates between our ideas of the two poets, and represents or interprets each of these ideas to the other.

This last example suggests an endless wealth of complexities. And the interpretation in question is also endlessly inadequate to our demands. But on its highest levels, as in its simplest instances, the process of explicit comparison is thus triadic, and to notice this fact is, for the purpose of our study of comparison, illuminating.

For when we merely set pairs of objects before us, and watch their resemblances and differences, we soon lose ourselves in mazes. Yet even when the mazes are indeed not to be penetrated by any skill, still a triadic comparison

is much more readily guided towards the light. "How does A differ from C?" If you can reply to this question by saying that, by means of B, A can be altogether transformed into C, or can, at least, be brought into a close resemblance to C, then the comparison of A to C is made definite.

Let me choose still one more illustration of such a comparison. This time the illustration shall not come from the literary realm; yet it shall be more complex than is the instance of the comparison between a written word and its image in the mirror.

If you cut a strip of paper, – perhaps an inch wide and ten inches long, – you can bring the two ends together and fasten them with glue. The result will be a ring-strip of paper, whose form is of a type very familiar in case of belts, finger-rings, and countless other objects. But this form can be varied in an interesting way. Before bringing the ends of the strip together, let one end of the paper be turned 180°. Holding the twisted end of the strip fast, glue it to the other. There now results an endless strip of paper having in it a single twist. Lay side by side an ordinary ring-strip that has no twist, and a ring-strip of paper that has been made in the way just indicated. The latter strip has a single twist in it. Hereupon ask a person who has not seen you make the two ring-strips, to compare them, and to tell you wherein they agree and wherein they differ.

To your question an ordinary observer, to whom this new form of ring-strip is unfamiliar, will readily answer that they obviously differ because one of them has no twist in it, while the other certainly has some kind of twist belonging to its structure. So far the one whom you question indeed makes use of a "third" idea. But this idea probably remains, so far, vague in his mind, and it will take your uninformed observer some time to make his comparison at all complete and explicit.

In order to aid him in his task, you may hereupon call his attention to the further fact that the ring-strip which contains the single twist has two extraordinary properties. It has, namely, but one side; and it also has but one edge. The mention of this fact will at first perplex the uninitiated observer. But when he has taken the trouble to study the new form, he will find that the idea of a "one-sided strip of paper" enables him to compare the new and the old form, and to interpret his idea of the new ring-form to his old idea of an ordinary ring such as has no twist, and possesses two sides.

V

In all the cases of explicit comparison which we have just considered, what takes place has, despite the endless varieties of circumstance, an uniform character.

Whoever compares has before him what we have called two distinct ideas; perhaps his ideas of these two printed or written words; or again, his ideas

of these two ring-strips of paper; or, in another instance, his ideas of Dante and of Shakespeare.

And the term "idea" is used, in the present discussion, in the sense which James and other representative pragmatists have made familiar in current discussion. Let us then hold clearly in mind this definition of the term "idea." For we shall even thereby be led to note facts which will lead us beyond what this definition emphasizes.

An idea, in this sense, is a more or less practical and active process, a "leading," as James calls it, whereby some set of conceptions and perceptions tend to be brought into desirable connections. An idea may consist mainly of some effort to characterize the data of perception through the use of fitting conceptions. Or, again, an idea may be a prediction of future perceptions. Or, an idea may be an active seeking for a way to translate conceptual "bank-notes" into perceptual cash. In any one idea, either the perceptual or the conceptual elements may, at any one moment, predominate. If the conceptual element is too marked for our purposes, the idea stands in need of perceptual fulfilment. If the perceptual element is too rich for our momentary interests, the idea needs further conceptual clarification. In any case, however, according to this view, the motives of an idea are practical, and the constituents of an idea are either the data of perception, or the conceptual processes whereby we characterize or predict or pursue such data.

But when, in Peirce's sense of the word, we have to make an explicit comparison, we have before us two distinct and contrasting ideas. It is their distinctness, it is their contrast, which determines our task. And these ideas involve, in general, not only different perceptual and different conceptual constituents, but also different and sometimes conflicting "leadings," different and sometimes mutually clashing interests, various and mutually estranged motives, activities, or constructions. These two ideas may contrast as do two forms of art. Or they may stand out the one over against the other as if they were two geometrical structures. They may collide as do two warring passions. They may first meet as simple strangers in our inner world. Their relations may resemble those of plaintiff and defendant in a suit at law. Or they may be as interestingly remote from one another as are the spiritual realms of two great poets. In such endlessly various fashions may the two ideas come before us.

The essential fact for our present study is that, in case of the comparisons which Peirce discusses, the problem, whether you call it a theoretical or a practical problem, is not that of linking percepts to their fitting concepts, nor that of paying the bank bills of conception in the gold of the corresponding perceptions. On the contrary, it is the problem, either of arbitrating the conflicts; or of bringing to mutual understanding the estrangements; or of uniting in some community the separated lives of

these two distinct ideas, – of ideas which, when left to themselves, decline to coalesce or to coöperate, or to enter into one life.

This problem, in the cases of comparison with which Peirce deals, is solved through a new act. For this act originality and sometimes even genius may be required. This new act consists in the invention or discovery of some third idea, distinct from both the ideas which are to be compared. This third idea, when once found, interprets one of the ideas which are the objects of the comparison, and interprets it to the other, or in the light of the other. What such interpretation means, the instances already considered have in part made clear. But the complexity and the significance of the processes involved require a further study. And this further study may here be centered about the question: What is gained by the sort of comparison which Peirce thus characterizes? And, since we have said that all such comparison involves an activity of interpreting one idea in the light of another, we may otherwise state our question thus: What, in these cases of comparison, is the innermost aim of the Will to Interpret which all these processes of comparison manifest?

VI

The rhythm of the Hegelian dialectic, wherein thesis, antithesis, and higher synthesis play their familiar parts, will here come to the minds of some who follow my words; and you may ask wherein Peirce's processes of comparison and interpretation differ from those dialectical movements through division into synthesis, which Hegel long since used as the basis of his philosophy. I reply at once that Peirce's theory of comparison, and of the mediating idea or "third" which interprets, is, historically speaking, a theory not derived from Hegel, by whom at the time when he wrote these early logical papers, Peirce had been in no notable way influenced. I reply, further, that Peirce's concept of interpretation defines an extremely general process, of which the Hegelian dialectical triadic process is a very special case. Hegel's elementary illustrations of his own processes are ethical and historical. Peirce's theory of comparison is quite as well illustrated by purely mathematical as by explicitly social instances. There is no essential inconsistency between the logical and psychological motives which lie at the basis of Peirce's theory of the triad of interpretation, and the Hegelian interest in the play of thesis, antithesis, and higher synthesis. But Peirce's theory, with its explicitly empirical origin and its very exact logical working out, promises new light upon matters which Hegel left profoundly problematic.

Returning, however, to those illustrations of Peirce's theory of comparison which I have already placed before you, let us further consider the motives which make a comparison of distinct and contrasting ideas significant for the one who compares.

An idea, as I have said, is, in James's sense, a practical "leading." An idea, if, in James's sense, successful, and if successfully employed, leads through concepts to the desirable or to the corresponding percepts. But a comparison of ideas – that, too, is no doubt an active process. To what does it lead? It leads, as we have seen, to a new, to a third, to an interpreting idea. And what is this new idea? Is it "cash," or has it only "credit-value"? What does it present to our view? What does it bring to our treasury?

One must for the first answer this question in a very old-fashioned way. The new, the third, the interpreting idea, in these elementary cases of comparison, shows us, as far as it goes, ourselves, and also creates in us a new grade of clearness regarding what we are and what we mean. First, I repeat, the new or third idea shows us ourselves, as we are. Next, it also enriches our world of self-consciousness. It at once broadens our outlook and gives our mental realm definiteness and self-control. It teaches one of our ideas what another of our ideas means. It tells us how to know our right hand from the left; how to connect what comes to us in fragments; how to live as if life had some coherent aim. All this is indeed, thus far, very elementary information about what one gains by being able to hold three ideas at once in mind. But, in our own day, such information is important information. For our age, supposing that the contrast between perception and conception exhausts the possible types of cognitive processes, is accustomed to listen to those who teach us that self-knowledge also must be either intuitive (and, in that case, merely fluent and transient) or else conceptual (and, in that case, abstract and sterile).

But a dual antithesis between perceptual and conceptual knowledge is once for all in adequate to the wealth of the facts of life. When you accomplish an act of comparison, the knowledge which you attain is neither merely conceptual, nor merely perceptual, nor yet merely a practically active synthesis of perception and conception. It is a third type of knowledge. It interprets. It surveys from above. It is an attainment of a larger unity of consciousness. It is a conspectus. As the tragic artist looks down upon the many varying lives of his characters, and sees their various motives not interpenetrating, but coöperating, in the dramatic action which constitutes his creation, – so any one who compares distinct ideas, and discovers the third or mediating idea which interprets the meaning of one in the light of the other, thereby discovers, or invents, a realm of conscious unity which constitutes the very essence of the life of reason.

Bergson, in his well-known portrayal, has glorified instinct in its contrast with the intellect. The intellect, as he holds, is a mere user of tools. Its tools are concepts. It uses them in its practical daily work to win useful percepts. It loves to be guided in its daily industries by rigid law. It is therefore most at home in the realm of mechanism and of death. Life escapes its devices. Its concepts are essentially inadequate. Instinct, on the contrary, so far as man

still preserves that filmy cloud of luminous instinct and of intuition which, in Bergson's opinion, constitutes the most precious resource of genius, perceives, and sympathizes, and so comes in touch with reality.

That this account of the cognitive process is inadequate, both the artist and the prophets combine with the scientific observers of nature, with the mathematicians, and with the great constructive statesmen, to show us. Comparison is the instrument of what one may call, according to one's pleasure, either the observant reason, or the rational intuition whereby the world's leading minds have always been guided. And it is comparison, it is interpretation, which teaches us how to deal with the living, with the significant, and with the genuinely real.

Darwin, for instance, as a naturalist, saw, compared, and mediated. We all know how the leading ideas of Malthus furnished the mediating principle, the third, whereby Darwin first came to conceive how the contrasting ideas with which his hypotheses had to deal could be brought into unity. And that such comparison is peculiarly adapted to deal with the phenomena of life, let not only the genesis of Darwin's ideas, but the place of the process of comparison in the development of all the organic sciences, show.

If we turn to the other extreme of the world of human achievement, in order to learn what is the sovereign cognitive process, we shall find the same answer. For let us ask, – By means of what insight did Amos the prophet meet the religious problems of his own people and of his own day? He faced tragic contrasts, moral, religious, and political. Warring ideas were before him, – ideas, each of which sought its own percepts, through its own concepts of God, of worship, and of success. But Amos introduced into the controversies of his time the still tragic, but inspiring and mediating, idea of the God who, as he declared, delights not in sacrifices but in righteousness. And by this one stroke of religious genius the prophet directed the religious growth of the centuries that were to follow.

Think over the burial psalm, or the Pauline chapters on Charity and the Resurrection, if you would know what part comparison and mediation play in the greatest expressions of the religious consciousness. Remember Lear or the Iliad, if you wish to recall the functions of contrast and of mediation in poetry. Let the Sistine Madonna or Beethoven's Fifth Symphony illustrate the same process in other forms of the artistic consciousness.

If once you have considered a few such instances, then, summing up their familiar lessons, you may note that in none of these cases is it conception, in none of them is it bare perception, least of all is it inarticulate intuition, which has won for us the greatest discoveries, the incomparable treasures in science, in art, or in religion.

The really creative insight has come from those who first compared and then mediated, who could first see two great ideas at once, and then find the new third idea which mediated between them, and illumined.

We often use the word "vision" for this insight which looks down upon ideas as from above, and discovers the "third," thereby uniting what was formerly estranged. If by the word "intuition" one chooses to mean this grade of insight, then one may indeed say that creative mental prowess depends, in general, upon such intuition. But such intuition is no mere perception. It is certainly not conception. And the highest order of genius depends upon reaching the stage of Peirce's "third" type of ideas. Comparison, leading to the discovery of that which mediates and solves, and to the vision of unity, is the psychological basis of poetry, as Shakespeare wrote, and of such prophecy as Paul praised when he estimated the spiritual gifts. Comparison, then, and interpretation constitute the cognitive function whereby we deal with life. Instinct and bare perception, left to themselves, can never reach this level.

VII

When we consider the inner life of the individual man, the Will to Interpret appears, then, as the will to be self-possessed. One who compares his own ideas, views them as from above. He aims to pass from blind "leadings" to coherent insight and to resolute self-guidance. What one wins as the special object of one's insight depends, in such cases, upon countless varying psychological conditions, and upon one's success in finding or in inventing suitable mediators for the interpretation of one idea in the light of another. It may therefore appear as if in this realm of interior comparisons, where the objects compared are pairs of ideas, and where results of comparison consist in the invention of a third, there could be no question of attaining fixed or absolute truth. If anywhere pragmatism could be decisively victorious; if anywhere the purely relative and transient would seem in possession of the field, – one might suppose that comparison would constantly furnish us with instances of relative, shifting, and fluent truth.

As a fact, however, this is not the case. Comparison, which is so powerful an instrument in dealing with life, and with the fluent and the personal, is also perfectly capable of bringing us into the presence of the exact and of the necessary. All depends upon what ideas are compared, and upon the purpose for which they are compared, and upon the skill with which the vision of unity is attained.

Let the comparison of the two ring-strips of paper show what I here have in mind. The difference between a ring-strip which contains a single twist, and another which is constructed in the usual way, seems at first sight to be both insignificant and inexact. A closer study shows that the geometry of surfaces that possess but a single side can be developed into as exact a branch of pure mathematics as you can mention. The development in question would depend upon assuming, quite hypothetically, a few simple principles which are suggested, although not indeed capable of being proved, by experience of the

type which recent pragmatism has well analyzed. The branch of pure mathematics in question would consist of deductions from these few simple principles. The deductions would interpret these principles, viewed in some sort of unity and compared together.

But recent pragmatism has not well analyze the process whereby, in pure mathematics, the consequences which follow from a set of exactly stated hypotheses are determined. This process, the genuine process of deduction, depends upon a series of ideal experiments. These experiments are performed by means of putting together ideas, two and two, by comparing the ideas that are thus brought together, by discovering mediators, and by reading the results of the combination. This process may lead to perfectly exact results which are absolutely true.

I know of no writer who has better or more exactly analyzed the way in which such ideal experiments can lead to novel and precise results than Peirce has done. His analysis of the deductive process was first made a good while since, and anticipated results which Mr. Bertrand Russell and others have since reached by other modes of procedure.

Peirce has shown that, when you interpret your combinations of ideas through ideal experiments, using, for instance, diagrams and symbols as aids, the outcome may be a truth as exact as the ideas compared are themselves exact. It may also be in your own experience as novel a result as your ideal experiment is novel. It may also be an absolute and immutable truth.

What you discover, in a case of deduction, is not that certain conclusions are, in themselves, considered true, but that they follow from, that they are implied by, certain hypothetically assumed premises. But a discovery that certain premises imply a certain conclusion, is the discovery of a fact. This fact may be found, not by perception, nor by conception, but by interpretation. None the less, it is a fact and it may be momentous.

It is customary to imagine that such a deductive process can get out of given premises nothing novel, but only (as people often say) – only what was already present in the premises. This customary view of deduction is incorrect. As Peirce repeatedly pointed out (long before any other writer had explicitly dealt with the matter), you can write out upon a very few sheets of paper all the principles which are actually used as the fundamental hypotheses that lie at the basis of those branches of pure mathematics which have thus far been developed. Yet the logical consequences which follow from these few mathematical hypotheses are so numerous that every year a large octavo volume in fine print is needed to contain merely the titles, and very brief abstracts, of the technical papers containing novel results which have been, during that year, published as researches in pure mathematics.

The mathematical papers in question embody, in general, consequences already implied by the few fundamental hypotheses which I have just

mentioned. An infinite wealth of still unknown consequences of the same principles remains yet to be explored and stated. All of these consequences can be won, in pure mathematics, by a purely deductive procedure.

Thus endlessly wealthy, thus possessed of an inexhaustible fecundity, is the genuine deductive process. Peirce long ago showed why. And while the mathematical procedure which is in question cannot here be further discussed, it is enough for our present purpose to indicate why this fecundity of deduction exists.

VIII

Deduction, in the real life of the exact sciences, is a process that recent pragmatism has no means of describing, simply because recent pragmatism is the prey of the dual classification of the cognitive processes, and views what it calls the "workings" of ideas merely in terms of the relations between conceptions and perceptions, – between "credit-values" and "cash-values."

Pragmatism, as James defined it, regards an idea as a "leading," whereby one pursues or seeks particulars; and whereby one sometimes obtains, and sometimes fails to obtain, the "cash-values" which one aims to get. Such a doctrine has no place for the understanding of what happens when, looking down as it were from above, one compares two ideas, and looks for a mediating idea. But just this is what happens in all cases of explicit comparison.

Now in the individual case, an interpretation, a mediating idea, may come to mind through almost any play of association, or as the result of almost any degree of skill in invention, or as the outcome either of serious or of playful combinations. In consequence, an interpretation may prove to be, in the single case, of purely relative and momentary truth and value.

But this, on the other hand, need not be the fortune of interpretation. The results of a comparison may express absolute truths, – truths which once seen can never be reversed. This absoluteness itself may be due to either one of two reasons.

In pure mathematics, a deduction, if correct at all, leads to an absolutely correct and irrevocably true discovery of a relation of implication between exactly stated premises and some conclusion. Deduction does this because deduction results from a comparison, and because the ideas compared may be, and in pure mathematics are, exact enough to suggest, at some moment, to the observant reasoner, an interpretation which, if it applies at all, applies universally to every pair of ideas identical in meaning with the pair of ideas here compared.

The act of comparison may be momentary, and may even be as an event, an accident. The inventive watcher of his own ideas may have been led to his deduction by whatever motive you please. But the interpretation, once discovered, may nevertheless represent a truth which is absolute precisely

because it is hypothetical. For the assertion: "P implies Q," or "If F, then Q," is an assertion about a matter of fact. And this assertion, if true at all, is always and irrevocably true about the same pair of ideas or propositions: P and Q.

Or again, the result of an interpretation may be absolutely true, because, for whatever reason, the interpretation in question counsels the one who makes the interpretation to do some determinate and individual deed. This deed may be such as to accomplish, at the moment when it is done, some ideally valuable result. But deeds once done are irrevocable. If, by interpreting your ideas in a certain way, at a certain moment, you have been led to do a worthy deed, – then the interpretation remains as irrevocably true as the good deed remains irrevocably done.

The principle, then, relating to the value and to the truth of one's acts of interior and conscious comparison, is that they express an insight which surveys, as from above, an unity wherein are combined various ideas. These ideas, as they first come, are pragmatic leadings which may be mutually estranged, or mutually hostile, or widely contrasted, or intimately interconnected. But, whatever the ideas may have been before they were compared, – as a result of the comparison of the two ideas, one of them is interpreted in the light of the other. The interpretation may possess all the exactness of mathematics, or all the transiency of a chance observation of the play of one's inner life. It may result in Paul's vision of the charity that never faileth, ruling supreme over the contrasts and the bickerings of passing passion; or it may solve a problem of comparative natural history or of comparative philology. Whatever the varieties of the cases in question, comparison can occur, and can reach truth, simply because we are wider than any of our ideas, and can win a vision which shall look down upon our own inner warfare, and upon our own former self-estrangements, as well as upon our own inner contrasts of exact definition. This vision observes not data of sense and not mere abstract concepts. Nor does it consist simply in our pragmatic leadings, and in their successes and failures. It observes what may interpret ideas to other ideas; as prophets and poets interpret to us what otherwise would remain, in seeming, hopelessly various and bewilderingly strange. It is not more intuition that we want. It is such interpretation which alone can enlighten and guide and significantly inspire. Upon the comparisons which thus interpret, our spiritual triumphs depend. Such triumphs are not merely the pragmatic successes of single ideas. They are the attainment of mastery over life.

IX

Our lengthy study of comparison and interpretation, as they are present in the inner life of the individual man, has prepared us for a new view of the social meaning of the Will to Interpret. Here I must once more take a temporary leave of Peirce's guidance, and trust to my own resources.

One who compares a pair of his own ideas may attain, if he is successful, that vision of unity, that grade of self-possession, which we have now illustrated. But one who undertakes to interpret his neighbor's ideas is in a different position.

In general, as we have seen, an interpreter, in his social relations with other men, deals with two different minds, neither of which he identifies with his own. His interpretation is a "third" or mediating idea. This "third" is aroused in the interpreter's mind through signs which come to him from the mind that he interprets. He addresses this "third" to the mind to which he interprets the first.

The psychology of the process of social interpretation, so far as that process goes on in the interpreter's individual mind, is identical with that psychology of comparison which we have now outlined. Nobody can interpret, unless the idea which he interprets has become more or less clearly and explicitly one of his own ideas, and unless he compares it with another idea which is, in some sense, his own.

But, from the point of view of the interpreter, the essential difference between the case where he is interpreting the mind of one of his neighbors to the mind of another neighbor, and the case wherein he is comparing two ideas of his own, is a difference in the clearness of vision which is, under human conditions, attainable.

When I compare two ideas of my own, the luminous self-possession which then, for a time, may come to be mine, forms for me an ideal of success in interpretation. This ideal I can attain only at moments. But these moments set a model for all my interpretations to follow.

When I endeavor to interpret my neighbor's mind, my interpretation has to remain remote from its goal. The luminous vision of the results of comparison comes to me, at best, only partially and with uncertainty. My neighbor's ideas I indeed in a measure grasp, and compare with other ideas, and interpret; but, as I do this, I see through a glass darkly. Only those ideas whose comparisons with other ideas, and whose resulting triadic interpretations I can view face to face, can appear to me to have become in a more intimate and complete sense my own individual ideas. When I possess certain ideas sufficiently to enable me to seek for their interpretation, but so that, try as I will, I can never clearly survey, as from above, the success of any of my attempted interpretations, – then these ideas remain, from my own point of view, ideas that never become wholly my own. Therefore these relatively alien ideas can be interpreted at all only by using the familiar hypothesis that they belong to the self of some one else. Under ordinary social conditions this other mind is viewed as the mind of my neighbor. Neither of my neighbor nor of myself have I any direct intuition. But of my own ideas I can hope to win the knowledge which the most successful comparisons exemplify. Of my neighbor's ideas I can never win, under human conditions, any interpre-

tation but one which remains hypothetical, and which is never observed, under these human conditions, as face to face with its own object, or with the idea of the other neighbors to whom the interpretation is addressed.

The Will to Interpret is, in our social relations, guided by a purpose which we are now ready to bring into close relations with the most significant of all the ethical ideals which, in our foregoing lectures, we have portrayed.

The interpreter, the mind to which he addresses his interpretation, the mind which he undertakes to interpret, – all these appear, in our explicitly human and social world, as three distinct selves, – sundered by chasms which, under human conditions, we never cross, and contrasting in their inner lives in whatever way the motives of men at any moment chance to contrast.

The Will to Interpret undertakes to make of these three selves a Community. In every case of ideally serious and loyal effort truly to interpret this is the simplest, but, in its deepest motives, the most purely spiritual of possible communities. Let us view that simple and ideal community as the interpreter himself views it, precisely in so far as he is sincere and truth-loving in his purpose as interpreter.

X

I, the interpreter, regard you, my neighbor, as a realm of ideas, of "leadings," of meanings, of pursuits, of purposes. This realm is not wholly strange and incomprehensible to me. For at any moment, in my life as interpreter, I am dependent upon the results of countless previous efforts to interpret. The whole past history of civilization has resulted in that form and degree of interpretation of you and of my other fellow-men which I already possess, at any instant when I begin afresh the task of interpreting your life or your ideas. You are to me, then, a realm of ideas which lie outside of the center which my will to interpret can momentarily illumine with the clearest grade of vision. But I am discontent with my narrowness and with your estrangement. I seek unity with you. And since the same will to interpret you is also expressive of my analogous interests in all my other neighbors, what I here and now specifically aim to do is this: I mean to interpret you to somebody else, to some other neighbor, who is neither yourself nor myself. Three of us, then, I seek to bring into the desired unity of interpretation.

Now if I could succeed in interpreting you to another man as fully as, in my clearest moments, I interpret one of my ideas to another, my process of interpretation would simply reduce to a conscious comparison of ideas. I should then attain, as I succeeded in my interpretation, a luminous vision of your ideas, of my own, and of the ideas of the one to whom I interpret you. This vision would look down, as it were, from above. In the light of it, we, the selves now sundered by the chasms of the social world, should indeed not interpenetrate. For our functions as the mind interpreted, the mind to whom

the other is interpreted, and the interpreter, would remain as distinct as now they are. There would be no melting together, no blending, no mystic blur, and no lapse into mere intuition. But for me the vision of the successful interpretation would simply be the attainment of my own goal as interpreter. This attainment would as little confound our persons as it would divide our substance. We should remain, for me, many, even when viewed in this unity.

Yet this vision, if I could win it, would constitute an event wherein your will to be interpreted would also be fulfilled. For if you are indeed ready to accept my service as interpreter, you even now possess this will to be interpreted. And if there exists the one to whom I can interpret you, that other also wills that you should be interpreted to him, and that I should be the interpreter.

If, then, I am worthy to be an interpreter at all, we three, – you, my neighbor, whose mind I would fain interpret, you, my kindly listener, to whom I am to address my interpretation, – we three constitute a Community. Let us give to this sort of community a technical name. Let us call it a Community of Interpretation.

The form of such a community is determinate.

One goal lies before us all, one event towards which we all direct our efforts when we take part in this interpretation. This ideal event is a goal, unattainable under human social conditions, but definable, as an ideal, in terms of the perfectly familiar experience which every successful comparison of ideas involves. It is a goal towards which we all may work together: you, when you give me the signs that I am to interpret; our neighbor, when he listens to my interpretation; I, when I devote myself to the task.

This goal: – Our individual experience of our successful comparisons of our own ideas shows us wherein it consists, and that it is no goal which an abstract conception can define in terms of credit-values, and that it is also no goal which a possible perception can render to me in the cash of any set of sensory data. Yet it is a goal which each of us can accept as his own. I can at present aim to approach that goal through plans, through hypotheses regarding you which can be inductively tested. I can view that goal as a common future event. We can agree upon that goal. And herewith I interpret not only you as the being whom I am to interpret, but also myself as in ideal the interpreter who aims to approach the vision of the unity of precisely this community. And you, and my other neighbor to whom I address my interpretation, can also interpret yourselves accordingly.

The conditions of the definition of our community will thus be perfectly satisfied. We shall be many selves with a common ideal future event at which we aim. Without essentially altering the nature of our community, our respective offices can be, at our pleasure, interchanged. You, or my other neighbor, can at any moment assume the function of interpreter; while I can pass to a new position in the new community. And yet, we three shall constitute as clearly as before a Community of Interpretation. The new

community will be in a perfectly definite relation to the former one; and may grow out of it by a process as definite as is every form of conscious interpretation.

Thus there can arise, in our community, no problem regarding the one and the many, the quest and the goal, the individual who approaches the goal by one path or by another, – no question to which the definition of the community of interpretation will not at once furnish a perfectly precise answer.

Such an answer will be based upon the perfectly fundamental triadic relation which is essential to every process of interpretation, whether such process takes place within the inner life of an individual human being, or goes on in the world of ordinary social intercourse.

XI

Thus, then, if I assume for the moment the rôle of an interpreter, I can define my office, my Community of Interpretation, and my place in that community.

It will be observed that the sort of truth which, as interpreter, I seek, cannot be stated in terms as simple as those with which the current pragmatism is satisfied. My interpretation, if I offer to our common neighbor any interpretation of your mind, will of course be an idea of my own, – namely, precisely that "third" idea which I contribute to our community as my interpretation of you. And no doubt I shall desire to make as sure as I can that this idea of mine "works." But no data of my individual perception can ever present to me the "workings" which I seek.

For I want my interpretation of you to our neighbor to be such as you would accept and also such as our neighbor would comprehend, were each of us already in the position of the ideal observer from above, whose vision of the luminous unity of my interpretation and its goal I am trying to imitate whenever I try to interpret your mind.

Thus, from the outset, the idea which I offer as my interpretation of your mind, is offered not for the sake of, or in the pursuit of, any individual or private perception of my own, either present or expected or possible. I am not looking for workings that could conceivably be rendered in my perceptual terms. I am ideally aiming at an ideal event, – the spiritual unity of our community. I can define that unity in perfectly empirical terms; because I have compared pairs of ideas which were my own, and have discovered their mediating third idea. But I do not expect to perceive that unity as any occurrence in my own individual life, or as any working of one of my own personal ideas. In brief, I have to define the truth of my interpretation of you in terms of what the ideal observer of all of us would view as the unity which he observed. This truth cannot be defined in merely pragmatic terms.

In a community thus defined, the interpreter obviously assumes, in a highly significant sense, the chief place. For the community is one of interpretation. Its goal is the ideal unity of insight which the interpreter would possess were these who are now his neighbors transformed into ideas of his own which he compared; that is, were they ideas between which his own interpretation successfully mediated. The interpreter appears, then, as the one of the three who is most of all the spirit of the community, dominating the ideal relations of all three members.

But the one who is, in ideal, this chief, is so because he is first of all servant. His office it is to conform to the mind which he interprets, and to the comprehension of the mind to which he addresses his interpretation. And his own ideas can "work" only if his self-surrender, and his conformity to ideas which are not his own, is actually a successful conformity; and only if his approach to a goal which, as member of a human community of interpretation, he can never reach, is a real approach.

XII

Such are the relationships which constitute a Community of Interpretation. I beg you to observe, as we close, the ethical and religious significance which the structure of such a community makes possible. In case our interpretations actually approach success, a community of interpretation possesses such ethical and religious significance, with increasing definiteness and beauty as the evolution of such a community passes from simpler to higher stages.

Upon interpretation, as we have already seen, every ideal good that we mortals win together, under our human social conditions, depends. Whatever else men need, they need their communities of interpretation.

It is indeed true that such communities can exist, at any time, in the most various grades of development, of self-consciousness, and of ideality. The communities of interpretation which exist in the market-places of the present social world, or that lie at the basis of the diplomatic intercourse of modern nations, are communities whose ideal goal is seldom present to the minds of their members; and it is not love which often seems to be their consciously ruling motive.

Yet, on the whole, it is not perception, and it is not conception; while it certainly is interpretation which is the great humanizing factor in our cognitive processes and which makes the purest forms of love for communities possible. Loyalty to a community of interpretation enters into all the other forms of true loyalty. No one who loves mankind can find a worthier and more significant way to express his love than by increasing and expressing among men the Will to Interpret. This will inspires every student of the humanities; and is present wherever charity enters into life. When Christianity teaches us to hope for the community of all mankind, we can readily see that the Beloved

Community, whatever else it is, will be, when it comes, a Community of Interpretation. When we consider the ideal form and the goal of such a community, we see that in no other form, and with no other ideal, can we better express the constitution of the ideal Church, be that conceived as the Church on earth, or as the Church triumphant in some ideal realm of superhuman and all seeing insight, where I shall know even as I am known.

And, if, in ideal, we aim to conceive the divine nature, how better can we conceive it than in the form of the Community of Interpretation, and above all in the form of the Interpreter, who interprets all to all, and each individual to the world, and the world of spirits to each individual.

In such an interpreter, and in his community, the problem of the One and the Many would find its ideally complete expression and solution. The abstract conceptions and the mystical intuitions would be at once transcended, and illumined, and yet retained and kept clear and distinct, in and through the life of one who, as interpreter, was at once servant to all and chief among all, expressing his will through all, yet, in his interpretations, regarding and loving the will of the least of these his brethren. In him the Community, the Individual, and the Absolute would be completely expressed, reconciled, and distinguished.

This, to be sure, is, at this point of our discussion, still merely the expression of an ideal, and not the assertion of a metaphysical proposition. But in the Will to Interpret, the divine and the human seem to be in closest touch with each other.

The mere form of interpretation may be indeed momentarily misused for whatever purpose of passing human folly you will. But if the ideal of interpretation is first grasped; and if then the Community of Interpretation is conceived as inclusive of all individuals; and as unified by the common hope of the far-off event of complete mutual understanding; and, finally, if love for this community is awakened, – then indeed this love is able to grasp, in ideal, the meaning of the Church Universal, of the Communion of Saints, and of God the Interpreter.

Merely to define such ideals is not to solve the problems of metaphysics. But it is to remove many obstacles from the path that leads towards insight.

These ideals, however, are grasped and loved whenever one first learns fully to comprehend what Paul meant when he said: "Wherefore let him that speaketh with tongues pray that he may interpret." This word is but a small part of Paul's advice. But in germ it contains the whole meaning of the office, both of philosophy and of religion.

THE DOCTRINE OF SIGNS

"The Doctrine of Signs." *The Problem of Christianity* (New York: Macmillan, 1913), vol. 2, chap. 14, pp. 279–325.

The Christian doctrine of life is dominated by the ideal of the Universal Community. Such was the thesis defended in the first part of this series of lectures. The real world itself is, in its wholeness, a Community. This was the metaphysical result in which our study of the World of Interpretation, at the last time, culminated.

I

Herewith the two assertions to which our study of the Problem of Christianity leads, are before you. Our concluding lectures must make explicit the relations between these two assertions. Hereby each of them will be interpreted in the light of the other.

Metaphysical theory and religious experience are always contrasting realms of inquiry and of insight. Therefore the task of our three concluding lectures constitutes a typical exercise in the process of interpretation. We have to compare results which have been reached by widely different methods. We have to mediate between them. The method of interpretation is always the comparative method. To compare and to interpret are two names for the same fundamental cognitive process.

The fitting order for such an enterprise is determined by the subject-matter. Since the metaphysical thesis with which our last lecture closed is very general, it will prove to be, indeed, a worthless abstraction, unless we illustrate its application to various special problems of life as well as of philosophy. What I can hope, within the limits of our brief remaining time, to make clearer, is what I may call the ground plan of the World of Interpretation.

The universe, if my thesis is right, is a realm which is through and through dominated by social categories. Time, for instance, expresses a system of essentially social relations. The present interprets the past to the future. At each moment of time the results of the whole world's history up to that moment are, so to speak, summed up and passed over to the future for its new deeds of creation and of interpretation. I state this principle here in a simply dogmatic form, and merely as an example of what I have in mind when I say that the system of metaphysics which is needed to define the constitution of

this world of interpretation must be the generalized theory of an ideal society. Not the Self, not the Logos, not the One, and not the Many, but the Community will be the ruling category of such a philosophy.

I must attempt, then, within our brief remaining time, to make this general metaphysical theory less abstract and more articulate. I must contrast our theory with others. I must make more explicit its relation to the Christian ideas. And then I must, in conclusion, survey what we have won, and summarize the outcome.

II

Let me begin by a few purely technical formulations. Charles Peirce, in the discussions which we have now so freely used, introduced into logic the term "Sign." He used that term as the name for an object to which somebody gives or should give an interpretation. I have not here to deal, at any length, with Peirce's development of his theory of Signs. His doctrine was, as you will recall, not at first stated as the basis for a metaphysical system, but simply as a part of a logical theory of the categories. My own metaphysical use of Pierce's doctrine of signs, in my account of the World of Interpretation at the last time, is largely independent of Peirce's philosophy. For the moment it is enough to say that, according to Peirce, just as percepts have, for their appropriate objects, individually existent Things; and just as concepts possess, for their sole objects, Universals, – so interpretations have, as the objects which they interpret, Signs. In its most abstract definition, therefore, a Sign, according to Peirce, is something that determines an interpretation. A sign may also be called an expression of a mind; and, in our ordinary social intercourse, it actually is such an expression. Or again, one may say that a sign is, in its essence, either a mind or a quasi-mind, – an object that fulfils the functions of a mind.

Thus, a word, a clock-face, a weather-vane, or a gesture, is a sign. Our reason for calling it such is twofold. It expresses a mind, and it calls for an interpretation through some other mind, which shall act as mediator between the sign, or between the maker of the sign, and some one to whom the sign is to be read.

Since an interpretation of a sign is, in its turn, the expression of the interpreter's mind, it constitutes a new sign, which again calls for interpretation; and so on without end; unless the process is arbitrarily interrupted. So much can be asserted as a purely logical thesis, quite apart from metaphysics. A sign, then, is an object whose being consists in the fact that the sign calls for an interpretation.

The process of interpretation, as it occurs in our ordinary social life, sufficiently illustrates the meaning of Peirce's new term. Peirce insists that the signs, viewed simply from a logical point of view, constitute a new and fundamen-

tally important category. He sets this category as a "third," side by side with the classic categories of the "universals" which form the "first" category, and the "individuals," which, in Peirce's logic, form the "second" category.

Peirce, as I have said, is not responsible for the metaphysical theory about the world of interpretation with which our last lecture closed. But his terminology enables us to summarize that theory by stating our own metaphysical thesis thus: "The universe consists of real Signs and of their interpretation."

In the order of real time the events of the world are signs. They are followed by interpreters, or by acts of interpretation which our own experience constantly exemplifies. For we live, as selves, by interpreting the events and the meaning of our experience. History consists of such interpretations.

These acts of interpretation are, in their turn, expressed, in the order of time, by new signs. The sequence of these signs and interpretations constitutes the history of the universe. Whatever our experience exemplifies, our metaphysical doctrine of signs generalizes, and applies to the world at large.

The world's experience is, from this point of view, not merely a flux. For, as Bergson rightly asserts, the world of any present moment of time is a summary of the results of all past experience. This view of Bergson's, however, is no mere intuition, but is itself an interpretation. Our own metaphysical thesis states in terms of interpretation what Bergson states as if it were a result of simple intuition.

Since any idea, and especially any antithesis or contrast of ideas, is, according to our metaphysical thesis, a sign which in the world finds its real interpretation, our metaphysical theory may be called a "doctrine of signs."

The title which I have given to this lecture serves to direct attention, through the use of a purely technical term, to the main issue. This issue is the one presented by the thesis that the very being of the universe consists in a process whereby the world is interpreted, – not indeed in its wholeness, at any one moment of time, but in and through an infinite series of acts of interpretation. This infinite series constitutes the temporal order of the world with all its complexities. The temporal order is an order of purposes and of deeds, simply because it is of the essence of every rational deed to be an effort to interpret a past life to a future life; while every act of interpretation aims to introduce unity into life, by mediating between mutually contrasting or estranged ideas, minds, and purposes. If we consider the temporal world in its wholeness, it constitutes in itself an infinitely complex Sign. This sign is, as a whole, interpreted to an experience which itself includes a synoptic survey of the whole of time. Such is a mere sketch of our doctrine of the world of interpretation.

III

I may aid towards a further understanding of our metaphysical thesis by using, at this point, an illustration.

When you observe, at a crossing of roads, a sign-post, you will never discover what the real sign-post is, either by continuing to perceive it, or by merely conceiving its structure or its relations to any perceived objects, or to any merely abstract laws in heaven or in earth. Nor can you learn what the signpost is by any process of watching in the course of your individual experience the "workings" of any ideas that it suggests to you as this individual man. You can understand what the sign-post is only if you learn to read it. For its very being as a sign-post consists in its nature as a guide, needing interpretation, and pointing the way. To know the real sign-post, you must then learn to interpret it to a possible hearer to whom you address your interpretation. This being to whom you address your interpretation must be a self distinct from your individual self. If, then, the sign-post is a sign-post at all, there are beings in the world that are neither individual objects of perception nor yet beings such that they are mere universals, the proper objects for conception.

If the sign-post is a real sign-post, there is in the world a community constituted of at least three distinct minds. There is, first, the mind whose intention to point out the way is expressed in the construction of this sign-post. There is the mind to which the sign-post actually points out the way. But the sign-post does not effectively point out the way to anybody unless, either by the aid of his own individual memory, or of somebody who helps him to read the sign, he learns what the sign means. There must then be a third mind which interprets the sign-post to the inquiring wayfarer. The wayfarer, if he knows how to read, may be his own interpreter. But there remain the three distinct mental functions. There is the function of the mind whose purpose the sign expresses; there is the mind which is guided by the interpretation of the sign; and there is the function of the interpreter to whom the reading of the sign is due. All these minds or functions must be real and distinct and must form one real community, if indeed the sign-post is a real sign-post at all.

This illustration may help us to grasp what the first thesis of our metaphysical doctrine means. Our experience, as it comes to us, is a realm of Signs. That is, the facts of experience resemble sign-posts. You can never exhaustively find out what they are by resorting either to perception or to conception. Nor can you define experience merely in terms of the sort of knowledge which pragmatism emphasizes. No "working" of any single idea can show what a real fact of experience is. For a fact of experience, as you actually view that fact, is first an event belonging to an order of time, – an event preceded by an infinite series of facts whose meaning it summarizes, and leading to an infinite series of coming events, into whose meaning it is yet to enter. But the past and future of our real experience are objects neither of pure perception nor of pure conception. Nor can you, at any present moment, verify any present idea of yours about any past event. Nor can you define past and future in terms of the present workings of any ideas. Past time and

future time are known solely through interpretations. Fast time we regard as real, because we view our memories as signs which need and possess their interpretations. Our expectations are interpreted to our future selves by our present deeds. Therefore we regard our expectations as signs of a future.

Therefore, to a being who merely perceived and conceived, or who lived wholly in the present workings of his ideas, past time and future time would be as meaningless as the sign-post would be to the wayfarer who could not read, and who found nobody to interpret to him its meaning. If the past and future are realities, then they constitute a life which belongs to some real community, whose ideas of past and of future are really interpreted.

Now our doctrine of the world of interpretation extends to all reality the presuppositions which we use in all our dealings with past and future time. Our memories are signs of the past; our expectations are signs of the future. Past and future are real in so far as these signs have their real interpretation. Our metaphysical thesis generalizes the rules which constantly guide our daily interpretations of life. All contrasts of ideas, all varieties of experience, all the problems which finite experience possesses, are signs. The real world contains (so our thesis asserts) the interpreter of these signs, and the very being of the world consists in the truth of the interpretation which, in the whole realm of experience, these signs obtain.

Let us turn back from these technical formulations and from these illustrations, and come again closer to the real life for which they are intended to stand.

IV

Despite my frequent mention of differences, there is one respect in which I am in full agreement with the spirit of pragmatism, as James defined it. Any metaphysical thesis, if it has a meaning at all, is the expression of an attitude of the will of the one who asserts this thesis.

In a remarkable recent book, entitled: "Die Philosophie des Als Ob," Vaihinger has given his own formulation to a view which he originally reached independently of the influence of pragmatism. It is the view that a philosophy is, in its essence, a resolution to treat the real world as if that world possessed certain characters, and as if our experience enabled us to verify these characters. This resolution is, in its essence, an active attitude of the will. Therefore Voluntarism must form an essential part of every philosophy which justly interprets our metaphysical interests. For our metaphysical interests are indeed interests in directing our will, in defining our attitude towards the universe, in making articulate and practical our ideals and our resolutions. So far, I say, Vaihinger and the pragmatists are right.

I do not believe, however, that our voluntarism must remain a *mere* pragmatism. I have long defended a philosophy, both of human life and of

the universe, which I have preferred to call an "Absolute Voluntarism." I developed such a philosophy, partly under the influence of James, but long before recent pragmatism was in question. In its most general form, this philosophy to which I myself adhere, asserts that, while every metaphysical theory is the expression of an attitude of the will, there is one, and but one, general and decisive attitude of the will which is the right attitude, when we stand in presence of the universe, and when we undertake to choose how we propose to bear ourselves towards the world. Any philosophy is inevitably a doctrine which counsels us to bear ourselves towards our world *as if* our experience were such and such. But I do not believe that the "Philosophy of the 'As if'" is, as Vaihinger asserts, merely a system of more or less convenient fictions. For if there are absolute standards for the will (and, in my own opinion, there are such standards), then the world of the will is no world of fictions. If there is one, and but one, right attitude of the will towards the universe, this attitude, when once assumed, is essentially creative of its own realm of deeds. Its so-called fictions are, therefore, not mere fictions, for they constitute a real life. Its so-called successes are no merely transient successes. For if there is any true success at all, every such success, however petty it seems, has a world-wide meaning. The realm of true success is not merely a world of change. For deeds once done are irrevocable; and every deed echoes throughout the universe. The past is unchanging. The expression of the will constitutes itself an actual life. The creative activity of the will is therefore no mere play with figments. It has the reality of a realm of deeds. And every deed has a value that extends throughout the world of the will. Each act is to be judged in the light of the principle: "Inasmuch as ye have done it unto the least of these."

I do not wish here to dwell upon the general features which I have repeatedly ascribed to this world of the will, where every fact is the expression of an individual decision, and is therefore an absolute fact. I do not intend to repeat even the outlines of my former statements, both of this absolute voluntarism and of my own type of idealism. I have too often told that tale. So far as possible, I wish, in the present exposition, to speak as if all my former words were unspoken.

As a fact, I still hold by all the essential features of these former attempts to state the case for idealism. But at present I am dealing with the World of Interpretation, and with the metaphysics of the Community. This I believe to be simply a new mode of approach to the very problems which I have formerly discussed.

My present interest lies in applying the spirit of my absolute voluntarism to the new problems which our empirical study of the Christian ideas, and our metaphysical theory of interpretation, have presented for our scrutiny.

With this, then, as the end now in view, let me try to tell you what attitude of will, what practical bearing towards the universe, what resolution, what

plan of life, should characterize, in my opinion, any one who undertakes to view the world in the light of that doctrine concerning the nature and the business of interpretation, which, at the last time, I sketched.

This essentially social universe, this community which we have now declared to be real, and to be, in fact, the sole and supreme reality, – the Absolute, – what does it call upon a reasonable being to do? What kind of salvation does it offer to him? What interest does it possess for his will? If he accepts such a view of things, how should he bear himself towards the problem of life? To what ideas of his own does such a view offer success? How can he bring such a view into closer relations with ordinary human experience?

V

James declared that the typical pragmatist is a man of an essentially dramatic temper of mind. I now have to point out that the believer in our world of interpretation also centers his interests about a genuinely dramatic undertaking.

I have already said that the world of interpretation includes an infinite series of acts of interpretation. I have shown, in an earlier lecture, that every act of interpretation involves novelty. The believer in this doctrine of signs, the one to whom every problem, every antithesis, every expression of mind, every tragedy of life, is a sign calling for interpretation, and in whose belief the world contains its own interpreter, both contemplates and shares in a world drama. But the attitude of will which befits one who holds this doctrine of signs can only be rightly understood in case we first distinguish three very general attitudes of the will with which, in certain of their special forms, we have now become well acquainted. Our will is always dramatic in its expressions. It passes from deed to deed. Its world is a world of sequences and of enterprises. But when it surveys this world, and when it summarizes the spirit of its undertakings, the will may assume any one of three distinct modes of appreciating both itself and its realm of actual or of possible deeds.

VI

The first of these modes, the first of the attitudes of the will to which I here direct your attention, is that to which Schopenhauer gave the name, "The Affirmation of the Will to live." This phrase of Schopenhauer is intended by its author to be extremely general, and to apply to active dispositions which are exemplified by all sorts and conditions of men. Whatever the natural man seeks, he intends, says Schopenhauer, to live if he can. And when the natural man affirms this will to live, he may have in mind any one of countless different, or even conflicting, motives and purposes.

He may be seeking pleasure, wealth, power, praise, material possessions, or manifold spiritual goods. He may call it righteousness or food, that he

desires. It may be the destruction of his enemies or the prosperity of his friends that he has in mind when he sets out towards his goal. He may be of any calling that you please. He may be a worldling or a recluse; a beggar or a king; an outcast or the center of an admiring company. In brief, his special purposes may vary as you will. The ideas, the "leadings," which, in the pragmatic sense, he desires to have succeed, may vary from man to man and from life to life, throughout the whole range of our social and individual objects of desire.

But, in any case, if, in Schopenhauer's sense, such a man affirms the will to live, be essentially desires to be himself, whoever he may be, and to win his aims, whatever the special aims be to which he commits himself. This desire for self-assertion, then, is present in all the Protean shapes of the affirmation of the will to live, and vivifies them.

While one affirms the will to live, he therefore gives himself over to the great game of life. As an individual man he has his friends and his enemies; his triumphs and defeats; his joys and his sorrows of pain and grief. But what happens to him does not, in so far, touch the heart and core of his will. He may shout with triumph, or cry aloud in his woe; he may pray to his gods for help, or may curse his fate in what he calls his despair; but withal, he means to continue his pursuit of the objects of desire. He may repent of his sins; but not of being himself. He may, in his hatred of ill-fortune, resort even to suicide. But such suicide is merely a revolt against disaster. It only affirms in its own passionate way the longing for some life which is not indeed the present life of the rebel who seeks suicide, but which, in all his condemnation of his own deeds or of his own misadventures, he still longs to live, if only death and the universe will yet permit him to express himself.

VII

Schopenhauer usually emphasizes the essentially selfish nature of this will to live, as it inspires the individual man. Yet Schopenhauer fully recognizes that we are all social beings, and that the will to live can keep us eagerly busy in and with the world of our fellows. Only, as Schopenhauer rightly interprets this affirmation of the will to live, the recognition of his fellow-men which the victim of this will to live constantly makes, is based, so to speak, upon the natural solipsism of the individual will.

And here we come to the very root, the inmost meaning, of this first of the three attitudes of the will which we are here considering.

One who thus, in Schopenhauer's sense, affirms the will to live, may cheerfully and sincerely acknowledge that other men exist, and he may be a good member of society. But he tends to found this acknowledgment of his fellow-man, and of the social will, upon what most philosophers regard as an argument from analogy. A man may, by reason of such analogy, extend the realm to which his will to live applies its interests. The early and purely

natural forms of family loyalty and of clan loyalty depend upon such practical expansions of the self. But, as we saw when we studied the Pauline doctrine of original sin, the will to live constantly meets its opponent in the wills of other individuals. And then its primal solipsism revives; and it hates its fellows. And even when such a will recognizes that an organized social will is in some sense a reality, it finds this social will either as a foreign fact, or as a mystery.

In brief, all the social facts seem to a man in whom Schopenhauer's will to live finds its natural affirmation, external and in general problematic, – known only through analogy and doubtfully. I will my own life; and observe my own life. My dealings with you seem, from this point of view, to be due to motives external to this will of mine.

"Why," says Professor James, addressing a supposed fellow-man in one of his essays on Radical Empiricism, "Why do I postulate your mind? Because I see your body acting in a certain way. Its, gestures, facial movements, words, and conduct generally are 'expressive,' so I deem it actuated, as my own is, by an inner life like mine. This argument from analogy is my *reason*, whether an instinctive belief runs before it or not. But what is 'your body' here but a percept in *my* field? It is only as animating *that* object, *my* object, that I have any occasion to think of you at all."

In the form of this familiar argument from analogy, – an argument which many philosophers indeed regard as expressing our principal reason for believing that our neighbors' minds are realities, – James also puts into words an equally familiar aspect of the metaphysical view which naturally accompanies this affirmation of the will to live. I perceive my own inner life, or, at all events, my own facts of perception. By analogy I extend the world thus primarily known to me. Other men are, in this way, hypothetical extensions of myself. For the rest, I believe in them because, unless I take due account of them, they snub or thwart my own will to live. My ideas are my own, and it is of the essence of my life as this individual that I want my own ideas to "work." Upon this affirmation of my will to live depends all the truth that I shall ever come to know.

Pragmatism, in its recent forms, is indeed one of the most effective philosophical expressions which Schopenhauer's "Will to live" has ever received. Pragmatism is fond of insisting upon its cordial and unquestionably sincere recognition both of the social world and of the real existence of many selves, and of countless distinct ideas.

But as a fact, this recognition of the many selves, of the real world, and of the infinite variety of ways in which different ideas obtain now one and now another "working," – this entire view of truth and of reality, – when pragmatism deals with such matters, is founded upon the view that (as James loved to say) all "workings" are "particular." Each idea aims at accomplishing the event which, if reached, then and there constitutes the truth of that

particular idea. Each idea therefore expresses and, as far as it can, affirms its own will to live. Each idea aims at its own success. Ideas, like all the other facts of James's world, hang together, as James was accustomed to say, "by the edges," if indeed they hang together at all. Their unities are temporary, accidental, and nonessential. The world of truth is thus indeed a dramatic world where each idea asserts itself while it can.

The life of truth is a drama wherein each pragmatic "leading," each individual expression of the will to succeed, "struts and frets its hour upon the stage, and then is heard no more."

Such is the philosophy wherein Schopenhauer's affirmation of the will to live finds its most recent, and, on the whole, as I suppose, its most effective expression.

VIII

In strong contrast to the affirmation of the will to live, Schopenhauer placed that attitude which he defined as the resignation, – the denial of the will to live. Here we have to deal with a tendency too well known to all students of the history of the spiritual life to need, in this place, extended portrayal, and too simple in its fascinating contrast with our natural life to require minute analysis. This is the attitude of the will which Southern Buddhism taught as the sole and sufficient way of salvation. In the form of saintly resignation the same ideal has received countless Christian expressions. Repeatedly this form of self-denial has been supposed to constitute the essence of Christianity. Repeatedly the expounders and defenders of the Christian doctrine of life have been obliged to insist that the Christian form of salvation does *not* consist in this simple abandonment of the will to live. I will not here repeat the tale which the greatest work of Christianity throughout the ages has so freely illustrated. Resignation alone does not save. To abandon his will to live does not by itself enable the individual to win the true goal of life. Let us, for the moment, simply accept this fact.

But since we are here interested in the metaphysical relations of these attitudes of the will, let us mention, in passing, that the resignation of the will to live is an attitude to which there correspond appropriate forms of metaphysical opinion. Here, again, the connections are well known, and need not here be dwelt upon. It is enough to say that whoever abandons the will to live, ceases, of course, to be interested in those "workings" of ideas which pragmatism regards as bringing us into empirical and momentary touch with the real. To such a resigned will, there remain only the cognitive processes of pure conception and of pure perception to consider. On the whole, in the history of thought those for whom salvation consists in the denial of the will to live have resorted to the metaphysics of pure perception, and have been mystics.

As has now been repeatedly pointed out by his critics, Bergson's philosophy consists of two parts, – a pragmatism which he regards as always incomplete and unsatisfactory, and a mysticism which, as he more fully expresses himself, be tends to make more prominent. The corresponding attitudes of the will also play their part, both in Bergson's cosmology and in his metaphysics. On the whole, Bergson thus far emphasizes the joyous aspect of his own philosophy of life. But plainly, in his view, the evolutionary process has been dominated by the will to live. And the inevitable outcome of such a domination, so long as the will to live takes the form which Schopenhauer and Bergson ascribe to it, is the discovery that such a realm of mere vital impulse is vanity, and vexation of spirit. Whenever the mysticism of Bergson is fully developed, by himself or by his followers, there will come to be expressed the corresponding attitude of the will. The vital impulse will be transformed into resignation; as Bergson's insistence upon free activity has already been subordinated to his counsel that we should give ourselves over to mere perception. When he tells us that the true artist perceives "for the sake of nothing, for the mere pleasure of perceiving," we remember Schopenhauer's saint, for whom "This our so real world, with all its suns and its milky ways," became "Nothing." Such, in fact, is the end of the mystic.

IX

But there is indeed a third attitude of the will. It is not Schopenhauer's attitude of the affirmation of the will to live. It is also not the other attitude which Schopenhauer believed to be the sole and sufficient salvation of the will. And this third attitude of the will possesses its appropriate metaphysics. As for what this attitude of the will is, – when we consider, not its doctrine of the universe, but its doctrine of life, – we are already well acquainted with it, because our entire discussion of the Christian ideas was devoted to making us familiar with its moral and its religious meaning. In returning, at this point, to the mention of this attitude of the will, I do so because we now are ready to understand the relation between this type of will, and the metaphysical doctrine of which I believe it to be the fitting accompaniment. Whoever has learned to understand the meaning of this third way in which the will can bear itself towards its world, will therefore be better prepared to grasp the foundations upon which the metaphysics of interpretation rests. The human value of this practical attitude does not by itself fully reveal the grounds of the technical theory which is here in question. But the intimate relations between theory and life are nowhere more pronounced than in this case, where reason and sentiment, action and expression, throw light, each upon the other, as is hardly anywhere else the case.

The attitude of the will which Paul found to be saving in its power, just as, to his mind, it was also divine in its origin, was the attitude of Loyalty. Now

loyalty, when considered from within, and with respect to its deepest spirit, is not the affirmation of the will to live of which Schopenhauer spoke. And loyalty is also not the denial of the will to live. It is a positive devotion of the Self to its cause, – a devotion as vigorous, as self-asserting, as articulate, as strenuous, as Paul's life and counsels always remained. The apostle himself was no resigned person. His sacrifices for his cause were constant, and were eloquently portrayed in his own burning words. They included the giving of whatever he possessed. But they never included the negation of the will, the plucking out of the root of all desire, in which Gotama Buddha found salvation. Paul died at his conversion; but only in order that henceforth the life of the spirit should live in him and through him.

X

Now this third attitude of the will, as we found in dealing with the whole Christian doctrine of life, has in any case its disposition to imagine, and also practically to acknowledge as real, a spiritual realm, – an universal and divine community. Christian theology, in its traditional forms, was a natural outcome of the effort to define the world wherein the loyal will can find both its expression and its opportunity. We have not now to consider the religious aspect of this third attitude of the will. But we are now fully prepared to state its relation to the metaphysical problems. All the threads are in our hands. We have only to weave them into a single knot.

As a reasonable being, when once I have come to realize the meaning of my dealings both with life and with the world, the first practical principle, as well as the first theoretical presupposition of my philosophy must be this: Whatever my purposes or my ideas, – whatever will to live incites me to create and to believe, whatever reverses of fortune drive me back upon my own poor powers, whatever problems baffle me, through their complexity and my ignorance, one truth stands out clear: Practically I cannot be saved alone; theoretically speaking, I cannot find or even define the truth in terms of my individual experience, without taking account of my relation to the community of those who know. This community, then, is real whatever is real. And in that community my life is interpreted. When viewed as if I were alone, I, the individual, am not only doomed to failure, but I am lost in folly. The "workings" of my ideas are events whose significance I cannot even remotely estimate in terms of their momentary existence, or in terms of my individual successes. My life means nothing, either theoretically or practically, unless I am a member of a community. I win no success worth having, unless it is also the success of the community to which I essentially and by virtue of my real relations to the whole universe, belong. My deeds are not done at all, unless they are indeed done for all time, and are irrevocable. The particular fortunes upon which James lays so much stress are not even particular, unless

they consist of individual events which either occur or do not occur. Each of these real events has therefore a being which lasts to the end of time, and a value which concerns the whole universe.

Such, I say, is the principle, at once theoretical and practical, upon which my philosophy must depend. This principle does not itself depend upon the momentary success of any individual idea. For it is a principle in terms of which we are able to define whatever real life there is, while, unless this principle itself holds true, there is no real life or real world in which we can find success.

XI

Now this principle is one which, with various dialectical explanations, I have, in other essays of my own, repeatedly defended. And, as I have said, I have no wish whatever to repeat, in this context, my own previous discussions. The relation of this essentially social attitude of the decisive will to the doctrine of the community, leads me to show what this general and underlying attitude of the social will is, by mentioning, as I pass, and by way of illustration, that most familiar and most profoundly metaphysical of the problems of common sense, the problem: What reason can any one of us give for holding that the mind of his neighbor is real at all? For the attitude of will, the postulate, the resolution which any one of us takes when he says to his fellow, "You are a real being," is precisely that attitude which our metaphysical thesis advises us to take towards the whole world when it tells us to say to the world: "I know that you are real, because my life needs and finds its interpreter. You, O World, are the interpretation of my existence."

At all events, the case of the bases of our ordinary social knowledge is a test case deciding the whole attitude towards life and towards truth and towards the universe.

XII

For James, as you have already seen, my only and, to his mind, my sufficient ground for believing in my fellow's existence, for "postulating your mind," is an argument from analogy, an extension of the inner life of my already known self, with its feelings, with its will, and with the workings of its ideas, into the perceived body of my neighbor, whose movements and expressions resemble mine.

Now, as a fact, the most important part of my knowledge about myself is based upon knowledge that I have derived from the community to which I belong. In particular, my knowledge about the socially expressive movements of my own organism is largely derived from what I learn through the testimony of my fellow-men. Therefore I cannot use the analogy of our exter-

nally expressive movements as my principal reason for believing in the reality of the inner life of my fellow-man, because I am very largely unable to perceive my own expressive movements in as direct a way as is that in which I perceive the organism and the movements of my fellow-man.

For instance, the appearance of my fellow's countenance is to me a sign of his mind. And signs of this type stand in the front rank of those facts of perception upon which my customary interpretation of his mind depends whenever he and I are in each other's presence.

But is my main argument for the thesis that my fellow's face expresses his mind, – and that his facial expressions are evidences of the existence of his mind, – an argument from analogy? Do I reason thus: "When my face looks thus, I feel so and so; therefore, since my neighbor's face looks thus, it is fair to reason by analogy that he feels so and so?" How utterly foreign to our social common sense would be this particular argument from analogy!

For, as a fact, I know very little about my own facial expressions, except what I learn, if indeed I learn it at all, through accepting as true certain reports of my neighbors regarding these facial expressions. I can indeed indirectly perceive my own face by looking in the mirror. But I thus learn hardly anything of importance to me about what my own changes of facial expression are. I have spent years of my life interpreting the signs which I read as I look at the countenances of other men. But when have I said to my neighbor: "Come, let us look in the glass together, so that, observing how my facial expression varies with my state of mind, I can learn to judge by the analogy of my own countenance what your changes of countenance probably mean?" To "postulate your mind" upon such a basis would be a form of solemn fooling.

The case is trivial, but typical for the way in which we interpret the usual signs of his mind which our neighbor gives to us. In large part, since I never normally view my own organism in a perspective which is closely analogous to the perspective in which I constantly perceive the body and the movements of my fellow-man. My most important knowledge about my own expressive movements comes to me at second hand. I learn how my own movements appear through the report of others.

Thus, then, I first believe that my fellow has a mind. As part or as consequence of this belief, I accept his testimony about how the movements of my organism seem when they are perceived by another man. As a result, I learn indirectly, and by the circuitous route that, so to speak, passes through my neighbor's mind, precisely the most significant of the analogies between my neighbor's expressive movements and my own. Yet these analogies are supposed, by James, and by the prevalent theory, to constitute my main evidence that my neighbor has a mind at all!

It would be hard to mention an instance of a more artificial doctrine than this prevailing opinion of philosophers regarding the bases of our social

consciousness. Yet this is the very doctrine which James advances as a typical illustration of his own radical empiricism. What I, as an individual, never experience at all, – namely, precisely those analogies between my own doings and my neighbor's outward behavior which are socially most important, are named by James as furnishing my sole reason for "postulating your mind."

XIII

Why, then, do I indeed postulate your mind?

I postulate your mind, first, because, when you address me, by word or by gesture, you arouse in me ideas which, by virtue of their contrast with my ideas, and by virtue of their novelty and their unexpectedness, I know to be not any ideas of my own.

Hereupon I first try, however I can, to interpret these ideas which are not mine. In case you are in fact the source of these new ideas of mine, I fail to find any success in my efforts to interpret these ideas as past ideas of my own which I had forgotten, or as inventions of my own, or as otherwise belonging to the internal realm which I have already learned to interpret as the realm of the self.

Hereupon I make one hypothesis. It is, in its substance, the fundamental hypothesis of all our social life. It is the hypothesis that these new ideas which your words and deeds have suggested to me actually possess an interpretation. They have an interpreter. They are interpreted. This hypothesis simply means that there exists some idea or train of ideas, which, if it were now present within my own train of consciousness, would interpret what I now cannot interpret. This interpreter would mediate between the new ideas which your deeds have suggested to me, and the trains of ideas which I already call my own. That is, this interpreter, if he fully did his work, would compare all these ideas, and would both observe and express wherein lay their contrast and its meaning. My hypothesis is that such an interpreter of the novel ideas which your expressive acts have aroused in me, actually exists.

Now such an interpreter, mediating between two contrasting ideas or sets of ideas, and making clear their contrasts, their meaning, and their mutual relations, would be, by hypothesis, a mind. It would not be my own present mind; for by myself alone I actually fail to interpret the ideas which your deeds have aroused in me. And these ideas which your doings have aroused in me are simply not my own. Now this hypothetical interpreter is what I mean by your self, precisely in so far as I suppose you to be now communicating your own ideas to me. You are the real interpreter of the ideas which your deeds suggest to me. That is what I mean by your existence as an "eject."

The reason, then, for "postulating your mind" is that the ideas which your words and movements have aroused within me are not my own ideas, and cannot be interpreted in terms of my own ideas, while I actually hold, as

the fundamental hypothesis of my social consciousness, that all contrasts of ideas have a real interpretation and are interpreted.

XIV

Our illustration has carried us at once into the mazes of our problematic social life together. But the case is a typical case. We have but to view it in its principle, and it shows what attitude of the will is the only decisive one in dealing with the interpretation of experience.

You are not a mere extension by analogy of my own will to live. I do not, for the sake merely of such analogy, vivify your perceived organism. *You are an example of the principle whose active recognition lies at the basis of my only reasonable view of the universe. As I treat you, so ought I to deal with the universe. As I interpret the universe, so, too, in principle, should I interpret you.*

We have no ground whatever for believing that there is any real world except the ground furnished by our experience, and by the fact that, in addition to our perceptions and our conceptions, we have problems upon our hands which need interpretation. Our fundamental postulate is: *The world is the interpretation of the problems which it presents.* If you deny this principle, you do so only by presenting, as Bergson does, some other interpretation as the true one. But thus you simply reaffirm the principle that the world has an interpreter.

Using this principle, in your ordinary social life, you postulate your fellow-man as the interpreter of the ideas which he awakens in your mind, and which are not your own ideas. The same principle, applied to our social experience of the physical world, determines our ordinary interpretations of nature and guides our natural science. For, as we have seen, the physical world is an object known to the community, and through interpretation. The same principle, applied to our memories and to our expectations, gives us our view of the world of time, with all its infinite wealth of successive acts of interpretation.

In all these special instances, the application of this principle defines for us some form or grade of community, and teaches us wherein lies the true nature, the form, the real unity, and the essential life of this community.

Our Doctrine of Signs extends to the whole world the same fundamental principle. The World is the Community. The world contains its own interpreter. Its processes are infinite in their temporal varieties. But their interpreter, the spirit of this universal community, – never absorbing varieties or permitting them to blend, – compares and, through a real life, interprets them all.

The attitude of will which this principle expresses, is neither that of the affirmation nor that of the denial of what Schopenhauer meant by the will to live.

It is the attitude which first expresses itself by saying "Alone I am lost, and am worse than nothing. I need a counsellor, I need my community. Interpret me. Let me join in this interpretation. Let there be the community. This alone is life. This alone is salvation. This alone is real." This is at once an attitude of the will and an assertion whose denial refutes itself. For if there is no interpreter, there is no interpretation. And if there is no interpretation, there is no world whatever.

In its daily form as the principle of our social common sense, this attitude of the will inspires whatever is reasonable about our worldly business and our scientific inquiry. For all such business and inquiry are in and for and of the community, or else are vanity.

In its highest form, this attitude of the will was the one which Paul knew as Charity, and as the life in and through the spirit of the Community.

Such, then, is the relation of the Christian will to the real world.

SOME PSYCHOLOGICAL PROBLEMS EMPHASIZED BY PRAGMATISM

Josiah Royce. "Some Psychological Problems Emphasized by Pragmatism." *Popular Science Monthly* 83.10 (October 1913): 394–411.

It is not my purpose upon this occasion to enter into the philosophical aspect of the discussion regarding pragmatism, excepting in so far as may be necessary to call attention to the psychological problems that I now have in mind. I presuppose, of course, a familiarity on the part of all of you with the main outlines of the recent discussions concerning the problem of truth. But I shall not try with any exactness to define what the term pragmatism means. I recognize that the word as now used refers to a considerable variety of opinions, and that the comparison of a "holding company" which Professor Dewey has, I believe, on one occasion employed, is not altogether inapt. It is enough for our present purpose that by the name pragmatism we all of us mean a certain set of tendencies in recent discussion which lay stress upon the importance of defining the truth of propositions or judgments or ideas in terms of those empirical facts and relations of facts which are said to constitute the "workings" of the propositions, or judgments, or ideas which are in question. The favorite summary of pragmatism, to the effect that from the point of view of pragmatism a proposition, or judgment, or idea is true "if it works," is sufficient to serve as a general indication of the tendencies of opinion which are here in question.

What pragmatism asserts about truth may be considered from the point of view of a general theory of knowledge, or of a metaphysic. But pragmatism itself especially emphasizes its relation to psychology, on the one hand, and to the recognized methods of empirical science, on the other. As Mr. Schiller said to me during the Philosophical Congress of 1908 at Heidelberg, "What is most essential to pragmatism is that it insists that the relations and values of the thinking process must be estimated in psychological terms. Success tests truth, and success is itself a matter of experience that can best be understood when it is defined psychologically." Another way of stating the essence of pragmatism is to insist, as Professor Dewey has so often done, upon the fact that the method which pragmatism proposes to apply to all problems is the method already used by the various sciences of experience. They employ "working hypotheses." They test these working hypotheses by comparison

with experience. Pragmatism consists in the assertion that all propositions should be tested as the hypotheses of science are tested.

These two points of view are, of course, very closely connected. Students of the physical sciences often take little account of the psychology of their own processes. But the processes of science obviously have their psychology, and this psychology conforms in its types to those laws of mental activity which have interested psychologists ever since the apperceptive process was formulated by Herbart, – yes, ever since the doctrine of association was so widely applied by the English psychologists, and still more since the modern so-called "functional" psychology has connected the apperceptive processes and the associative linkages with the physical processes whereby an organism is adjusted to its environment. The psychology of the apperceptive process, and the work of the scientific finding and testing of hypotheses, have a close relation, and since common sense also is interested in successful verifications, although this interest is less precise than is the interest of the student of the more exact sciences of observation in the criteria to which they submit their more careful tests, – common sense and science and psychology join in contributing their various shares to the modern general theory of truth.

But now to come to the matter to which I wish especially to attract your attention. Since pragmatism is thus especially interested in the psychology of the thinking process, it has emphasized this psychological problem in recent literature. A general psychology of thought, on a pragmatic basis, has been worked out by Professor Pillsbury. The psychological text-books of the Chicago school, and in particular the contributions of Professor Dewey, have familiarized us with other accounts of the psychology of thought. The psychological problems to which attention is thus especially attracted may be, of course, studied apart from their relations to the theory of truth. These problems are threefold. (1) There are the problems regarding the processes whereby hypotheses are invented, or, in common-sense terms, the processes whereby people get their ideas; (2) there are problems regarding the processes whereby ideas, once in hand, are made sufficiently clear to be a proper subject for testing; and (3) a psychological problem arises as to what happens when an idea is tested. To all these problems the pragmatists as psychologists have contributed. I wish to illustrate in the course of my discussion a certain dissatisfaction which I feel with the present state of some of their contributions to these purely psychological issues, when viewed apart from the other issues of the pragmatist philosophy.

Yet I admit that when you hear me you will say that my psychological dissatisfactions are due to certain philosophical dissatisfactions, and that the pragmatist psychology appears to me inadequate partly because I do not wholly accept the pragmatist theory of truth. I recognize the connection in my own mind between the two dissatisfactions. I do not wish to pretend that I can wholly dissociate my interest in psychology from my interest in the other

aspects of the pragmatist controversy and in the very nature of pragmatism itself. My pragmatist friends least of all would desire me to do this. And so I shall aid you in following my further inquiries if I first briefly state one ground of my dissatisfaction as a student of logic and of general philosophy, with the pragmatist's theory of truth. This statement I make not as if it were here important for the psychological purpose of this discussion, but because by confessing my own state of mind I may help you to fix your attention upon matters that will more directly interest you. For my dissatisfaction as a student of logic, with the pragmatist theory regarding truth, will call attention to the way in which I should approach precisely those psychological problems which pragmatism has most emphasized.

I

When pragmatism asserts that the truth of a proposition is tested by the "workings" of the ideas that the proposition expresses, a student of logic very naturally raises the question as to *what* workings are meant. A man who hears a proposition and who more or less completely understands its meaning, and who hereupon more or less believes the proposition, has certain mental attitudes aroused in him, and these mental attitudes have their physical expression. They tend to lead to action. The action may well be accompanied by expectations of various sorts, and the expectations may remain throughout more or less identical with those that the utterance of the proposition first arouses in the mind of the inquirer. Thus ideas may lead to actions. These actions may gratify or in a measure satisfy expectations. In this case the ideas which the proposition expressed are said to "work." But now consider the contrast between what this decidedly general statement expresses and what a student of any more exact empirical science is likely to have in mind when he thinks of testing the truth of a definite assertion. One familiar process of testing the truth of hypotheses in scientific regions is to trace the consequences that must be true if those hypotheses are true, and then to see whether these consequences can be found verified by particular experiences. An essential part of this process is the deduction of certain consequences from one's hypothesis. How extensive this deductive process may be, a glance at any textbook of theoretical physics, in particular of theoretical astronomy of the classic type, will show.

Now what happens when one deduces the consequences of an hypothesis? Does one simply let one's ideas work? Are the consequences of hypotheses simply ideas that are as a fact aroused in the mind of a man who begins with the hypothesis itself in mind? Certainly the usual taste and purpose of the student of any more exact science is *not* sufficiently expressed by saying that he looks merely for such "workings" as may happen to be suggested to his mind. *He is looking for what must be true if the hypothesis is true.* He is

making use of those mental processes whose nature is sometimes discussed in text-books of deductive logic. But when we are dealing merely with the world of common sense, ideas that have been suggested or propositions that have been uttered, frequently arouse in our minds expectations which are not directly called for by the logical meaning of the propositions, but which through various processes of association or various reminders of past experience are more or less casually aroused. Such resulting expectations may be said in a given mind to follow from the utterance of the proposition that arouses them. But they are not logical consequences of the proposition in the sense which the student of the more exact sciences has in mind.

Again, when the student of an exact science has made his deductions and proceeds to verify them, he may find his hypothesis confirmed or refuted by the results of experience. In this case his hypothesis may be said to "work," but what sort of working is in question in the more exact sciences? I answer, in any more exact science the confirmations or refutations which experience is able to furnish to the hypothesis whose logical consequences are to be tested, are required to be so exact that we can define them in definite *affirmations* and *denials*. The very essence of precise confirmation or refutation is that if it is as successful as the requirements of an exact science demand, we are able to say as the result of our process of confirmation, "So and so, thus and thus defined, happens or does not happen, is found or is not found." Or again, we sometimes say of the failing hypothesis, "It is *contradicted* by the facts." Somewhat different however is the situation in the world of common sense, where one's expectation may often be met or disappointed with very various degrees of definiteness. In the world of common sense a man may say, "This more or less meets my expectations." In the world of an exact science the investigator is interested in seeing within what precise limits a definite experienced measurement agrees with the prediction. *Precision*, in other words, characterizes the confirmations or refutations which experience furnishes in the more advanced sciences. And the concept of precision has characters which are studied in text-books of logic, although, as I admit, in most textbooks of logic the concept of precision is very inadequately studied.

In consequence of all this the student of logic is likely to object to the ordinary formulation of pragmatism, (1) that pragmatism seems not to be interested in the distinction between merely arousing an expectation, and deducing a consequence; (2) that it takes comparatively little account of the distinction between feeling more or less personal satisfaction in partial agreements between experience and our expectations, and precisely confirming or refuting a determinate hypothesis, in so far as that can be done by a certain group of experiences.

And finally the student of logic finds a certain difficulty in the usual statements of pragmatism regarding the sense in which empirical verifications are said to lead to a certain "belief" that the ideas which we have been trying to

verify are true. In ordinary life beliefs exist in all sorts of vague degrees of intensity. But when the student of a science formulates his results, considerable stress is laid upon the assertion that, by virtue of a given group of confirmations, a hypothesis has received a somewhat determinate degree of what is called *objective probability*. Now into the theory of probability this is no place to go. But most of you who have dealt with statistical probabilities will admit that our subjective confidence is somewhat different in its nature from that objective or statistically estimated probability which most students of an inductive science prefer to be able to define if they can. The whole modern development of the theory of probability has been in the direction of separating the concept of objective probability from the concept of subjective belief or confidence. From the objective point of view a proposition has a certain probability *P* in case it belongs to the class of propositions of which in the long run a proportion *P* are true. The difficulty of defining such probability with genuine exactness is great, and the whole subject of probability is too complex to be here discussed, but the student of logic feels dissatisfied with the fact that his pragmatist brethren take little interest in defining the difference between the vague confidence which in the world of common sense confirmed expectations may arouse, and the scientific measure of probability in exact and relatively objective terms which the students of an inductive science are commonly seeking.

II

So much for my general statement of logical scruples concerning the adequacy of pragmatistic formulations. Into the merits of these logical scruples I have no wish to go on this occasion. I have stated them merely in order to formulate the problems of a psychological nature to which I wish to attract attention. Pragmatism has emphasized these problems, has undertaken to solve them, has contributed a great deal to their study, but in my opinion has failed to satisfy all the requirements that it might satisfy, just because it is not sufficiently interested in the very logical problems that I have just outlined. These logical problems, however, have their psychological aspects. If one does not deal with them in an exact fashion from the logical point of view, one is not likely to have one's attention attracted to their psychological complexity. On the other hand, if I can do anything to awaken your interest in the psychological character of these problems, perhaps I may indirectly help to awaken interest in their logical aspect.

Let me repeat the list of the problems to which I have called attention, emphasizing the sense in which each one of them is a psychological problem. I mention the fact that a science which is testing hypotheses *deduces the logical consequences of these hypotheses*. The process may be an extended one. W*hat is the psychology of deduction?* What happens when a process of

deduction takes place? In some respects this problem has indeed been repeatedly dealt with from the psychological point of view. I do not wish in the least to deny that the analyses of Professor Pillsbury and others have contributed to this problem, but just because these psychologists have been so little interested in the logic of the deductive process they have failed, in my opinion, to emphasize some of its most important psychological aspects. Yet their own discussions emphasize the need of such a psychology. Here lies the first of the problems to which I now call attention.

Secondly, the pragmatists in speaking of the working hypothesis have emphasized, as Professor Moore has recently done, the fact that the agreement of an assertion or idea with its expected workings constitutes the test of its truth so far as up to a certain point in our investigations we may happen to have gone. I have called attention to the difference between an expectation and an assertion or a denial. One goes to the play expecting amusement. At the end of the play, have his expectations been met or not? The question may be unanswerable in any definite way. The play was amusing, and yet perhaps not so very amusing, or not so amusing as one could have wished it to be. One goes away partially disappointed, partially pleased. One is not so disappointed but that one continues to go to plays over and over again. One is not so pleased that he expresses himself very enthusiastically. What ideas with regard to the amusing character of plays have been precisely tested, so long as one remains in this state of mind? On the other hand, through a deductive process the occurrence of an eclipse is precisely predicted. The eclipse is observed, its beginning is noted with an accuracy as great as the errors of observation permit. A precise assertion is made as to the agreement between the prediction and the observation. When the assertion has received its proper qualifications with regard to probable error and the rest, the assertion appears in the records as true or false. In this case an issue is met and something is tested, yes or no. I now ask, what is the psychology of assertion and denial, of the difference between yes and no? In what way does this difference, namely that between yes and no, differ from any other kind of difference? This problem I mention, without hoping in this paper to do more than mention it. I called attention to this psychological problem some years since in an address that I was permitted to give before the Psychological Association. I venture to emphasize this problem afresh and to declare that it is a problem which the whole pragmatist controversy has itself especially emphasized and has not yet adequately solved.

Again I have called attention to the difference between vaguely estimated confidence and objective probability. Here is a problem that once more presents psychological aspects. I shall have no time to discuss them upon this occasion. The psychology of probability is, however, to my mind one full of very interesting problems.

III

I have thus enumerated three of the psychological problems which to my mind are emphasized by the course of the pragmatistic discussion. That these problems come to my mind with a special force because of my logical interest, you see. It is now my purpose to appeal to you as psychologists or as students interested in the subject, to follow for a few moments some further characterization especially of the first of these psychological problems. I am dissatisfied in the recent discussions of the psychology of reasoning with what seems to be a failure to understand what takes place in exact deductive procedure. The current prejudices as well as the hoary traditions on this subject seem to conspire to call the attention of students away from the center of the problem. Without attempting to give any adequate summary of Professor Pillsbury's account of the reasoning process in his recent "Psychology of Reasoning," I may attempt by a few references to indicate how inadequate some current views are to take account of what the deductive process actually is. In Professor Pillsbury's "Psychology of Reasoning," he distinguishes pretty sharply between the two processes of *inference* and *proof*. By inference, if I understand him, he means the process whereby a conclusion is suggested in such wise as to arouse more or less belief. By proof he means a process whereby this belief is more or less adequately tested. Now logicians are accustomed to use the word inference in a somewhat different way from that which Professor Pillsbury emphasizes. And what this way is I shall try to point out in a moment. But laying inference aside for the moment, and passing to the other side of the reasoning process as Professor Pillsbury defines it, namely to the process of proof, the only form of deductive proof which Professor Pillsbury seems to emphasize is the one that has received its traditional description in the doctrine of the syllogism. The essence of the traditional syllogism is, according to Professor Pillsbury, that the general major premise is supposed to aid us in testing our belief in the conclusion, by virtue of the fact that in the minor premise something has been brought under this major premise as a particular case of the principle. Professor Pillsbury consequently points out how comparatively insignificant both from the logical and from the psychological point of view the syllogism is as an expression of the nature of the concrete process of reasoning. To bring cases under major premises is to do little to confirm our belief except in so far as one thus emphasizes in a somewhat formal way the tendency of every new or questionable fact to find its place by being brought into conformity with the habits, or better with the principles of action, which have been formulated on the basis of previous experience. Deductive proof appears therefore to be, as Professor Pillsbury says, not so different from induction as is usually supposed, and to be in any case of comparatively minor importance. The business of proof, according to Professor Pillsbury, is to produce belief. Belief in general

is not produced by formulating major premises. It is produced by a more complex process whose general nature he sets forth.

Other familiar discussions of the reasoning process, such as one finds in the text-books of recent pragmatists, agree with Professor Pillsbury in assuming that it is of the essence of deduction or of deductive proof to proceed from the general to the particular, and that the significance of deductive proof lies in the fact that one hereby formulates, often somewhat uselessly, the general process by which an adjustment to the environment in cases of initial doubt or difficulty is attained. Apart from these statements more characteristic of pragmatists, a wide-spread tradition, which unfortunately is supported by the older logical text-books themselves, maintains that it is of the essence of deductive reasoning to bring nothing out of the premises except what was already in them, so that the essence of the deduction is "analysis." From this point of view it is supposed that when you engage in deduction you solemnly draw out of the bag the cat which you have already hidden in it. You declare, for instance, that all the *A*'s that are *B* are indeed *B*, and solemnly demonstrate that all the white mice must be both white and mice. It is unquestionable that many of the logicians of the past as well as the psychologists of recent times have conspired to give this impression of the deductive process. But whatever the psychology of deduction may be, any fair examination of the work of the exact deductive operations of science, and especially any examination of the work of mathematics, shows that deduction as it exists in real life is simply not this fiction of the older logical text-books. And yet to the psychological analysis of this fiction, with the natural result that such a process is not of very great importance, Professor Pillsbury, as I understand him, devotes himself in his discussion of the place of the syllogism in life.

But anybody who undertakes to deal with the psychology of reasoning ought, I think, to take account of the fact that there is nowadays a new logic, that this new logic is in considerable part the work of men whose attention has been attracted to the nature of the deductive process by a wide experience of mathematical procedure, and that this new logic shows us with regard to the syllogism, for instance, two things, first that the essence of the syllogism does not consist in the fact that a particular case is brought under a general principle; and secondly, that the syllogism is by no means the only form of deductive reasoning. From the point of view of the new logic, the student has upon his hands the problem that Poincaré has so well stated at the outset of his book, "Science and Hypothesis." This is the problem presented by the enormous *Fecundity of the Deductive Process*. Our own American logician, Charles Peirce, long since called attention to this fecundity. It is a fact of much philosophical importance. What I mean by the fecundity of deduction as a logical fact can be suggested by what Poincaré mentioned, and also by a summary of the matters to which Peirce has frequently called attention. Poincaré states the case thus: From the point of view of the older interpretation

of the nature of the syllogism it would seem impossible that a deductive science such as mathematics could do anything but draw out of premises what it had already more or less overtly or secretly put into them. Nothing novel could result. And in fact if the reasoning of mathematics were all of the kind that Professor Pillsbury supposes to be the typical deductive reasoning, mathematical science would consist in a process as stupid and monotonous as the process of taking the major premise, All men are mortal, and then looking up all the names in a directory and solemnly concluding to write opposite to each name the fact that since this person is a man he is mortal. But now as a fact mathematical science consists of nothing of the kind. The situation is actually this: you can write upon a few sheets of paper an accurate statement of a set of principles from which the whole science of the quantities of ordinary algebra can be deduced. That is to say, the principles of the ordinary mathematical analysis are capable of such a brief statement as this. But the consequences of these principles are such that novel results in vast numbers are annually discovered. These results are not stowed away in the premises in any such way as that in which the mortality of this man is stowed away in the assertion of the mortality of all men.

Poincaré, in the passage to which I have referred, suggests his own theory to account for the fecundity of mathematical analysis. His theory may as a logical theory be questioned. But the fecundity to which he attracts attention ought to be a commonplace to any one who has looked into any branch of mathematics with care. Peirce has called attention to this fact, and speaking as a logician has gone further. Following a lead of De Morgan's, Peirce has shown that any proposition whatever which has a definite meaning permits you to draw from it an infinite number of deductive inferences, all of which are possible without formulating any other basis for the deductions in question than the assertion of the original proposition and the synthetic power which one indeed has in his hands who is capable of understanding certain simple processes of the construction of relations. Let me mention the instance, famous in modern logic, which De Morgan first formulated; and which as it stands may appear trivial enough. If a horse is an animal, you can deduce from that hypothesis the conclusion that the owner of a horse is the owner of an animal, that the friend of the owner of a horse is the friend of the owner of an animal, and so on. Such deductions in an individual case such as that of the assertion about a horse may seem and are trivial enough. *But they have the character of novelty:* That is, the conclusion does not follow from the premises by the process of first stuffing a vast number of cases into a bag and then pulling them out one by one. But the process of deduction thus illustrated can be used and is used as an instrument of enormous power in those branches of mathematics in which one builds one system of relations upon another system. The number of ways whereby such deductive processes can be accomplished is presumably very great. And it is because such

processes are possible that mathematical reasoning possesses its great fecundity.

And now since such fecundity, such proof of novelties, is the essence of the live process of deduction as it exists in the deductive sciences, why should not psychologists study that live process instead of studying the dead body which some text-books have called the syllogism? And if they must study the syllogism as the supposed typical example of deductive reasoning, why should they confine their attention to considering the most traditional and trivial aspect of it?

As modern logic has shown, the really essential feature of the syllogism lies in the fact that what the logicians call the Illative Relation (that is, the relation which is in mind when you consider one proposition as true in case another is true) is a relation which has the property of so-called *transitivity*. That is, the essence of the syllogism may be stated by saying that from the pair of propositions "*A* implies *B*," and "*B* implies *C*" taken together you can deduce the conclusion "*A* implies *C*." In other words, it is of the nature of the illative relation that it permits the use of what James called the principle or axiom of skipped intermediaries. I can not pause to show why this account of the essence of the syllogism is logically correct. But the mere mention of this fact shows that those who analyze the process of deduction, supposing it to be represented by the traditional syllogism, and interpreting the traditional syllogism in the way in which Professor Pillsbury interprets it, simply miss the most interesting feature of syllogistic reasoning.

Nor is the aspect of the syllogistic reasoning which this emphasizes, the only one to which modern logic calls attention. Mrs. Ladd-Franklin long ago pointed out that the entire theory of the syllogism could be stated as a sort of comment upon the fact that a triad of propositions which she called "a triadic inconsistency" has, when considered as a triad, a certain set of logical properties. These logical properties, belonging to such a triad of propositions, can be observed by a process which is of the nature widely illustrated throughout the whole realm of mathematics; but this is certainly *not* the synthesis that Professor Pillsbury has in mind when he analyzes what he supposes to be a typical process of deductive reasoning.

Still more unfortunate for the study of the psychology of the reasoning process is that misunderstanding of the nature of deduction which supposes that the principal use of a deduction is to bring to pass a belief in a certain conclusion by virtue of an appeal to a belief in certain premises. This assumption, common in the recent literature of pragmatism, is false to the most essential use of deduction in the exact sciences. Mr. Russell has well emphasized the fact that, in mathematical science, just in so far as it is pure mathematics, you are not concerned with producing belief in the conclusions themselves. Your interest in pure mathematics, that is to say in that science which deals with deduction proper, lies simply in showing that *certain*

premises do imply certain conclusions. That is, you show that "*p* implies *q*," where *p* and *q* are propositions. The importance of mathematics for the empirical sciences is due to the fact that it gives you a means for testing the hypotheses by first finding out what are their logical consequences. Now it is essential for the fair and unprejudiced testing of an hypothesis, that you should *not* be too much disposed to believe in it before you test it. It is very important, when you do not believe an hypothesis, or when your mind is still perfectly open upon the subject, *to find out with exactness what would be true if the hypothesis were true*. Your purpose in deduction is therefore not to establish belief in certain consequences by virtue of a previous belief in the hypothesis upon which they depend. Your great interest is to produce *no belief whatever either in the hypothesis or in the conclusions from the hypothesis, until the logical issues are precisely defined* for empirical confirmation; and then you are *ready* to appeal to the confirming or refuting experience. It is a strange misunderstanding of the nature of the deductive process to suppose that its principal interest is an interest in producing belief in consequences. The sole logical interest of the deductive inquirer lies in his discovery that certain premises imply certain conclusions.

To sum up, then, this sketch: I assert that in the recent psychology of reasoning, *the nature of the deductive process and its principal purpose have been equally misunderstood*. Deduction in its more developed forms simply does *not* consist in an analysis of the premises. Nor is it intended to make you believe the conclusion. The true interest of deduction lies in the fact (1) that it is a process possessing an inexhaustible fecundity, and (2) that this fruitfulness results in giving you a knowledge that certain premises imply certain conclusions.

IV

But now let me briefly put before you some genuine deductive processes, and point out what problems with regard to their psychology can be aroused. Let me begin with the instance with which I have often wearied my friends, so that some of you who are here present will have heard me mention it. Raise the question whether a strip of paper can exist which shall have only one side. One would be disposed to settle the question empirically by observing that every strip of paper in one's ordinary experience obviously has two sides. If one passes from a consideration of strips of paper that have two ends, to the consideration of endless strips of paper, that is strips of paper made in ring shape, one sees that in an ordinary ring the two-sidedness of strips of paper still holds good. But if one takes an ordinary strip of paper, say two inches wide and eight or ten inches long, first twists one end of it 180 degrees, and then brings the two ends together, one has the resulting geometrical form of the one-sided ring. The first discovery that such a ring is possible was of

course an empirical discovery. But the geometers (I believe it was Möbius who first noticed one-sided surfaces) had their attention at once attracted to the mathematically interesting properties of this form. Now when such a form is viewed as a mathematical object, any one with mathematical interest naturally proceeds to an undertaking of the sort which is characteristic of mathematical science in general. One endeavors to deduce some of these properties from others, or to discover, as the ordinary mind would say, why these properties belong to any one-sided surface. Hereupon let me mention a problem that can be studied as soon as you have once taken note of the one-sided surface and have begun to make a study of the real sense or connection of its structure. Suppose a one-sided surface, a ring strip of the sort that I have described, to be cut down the middle, midway between what appear to be the two edges of the strip, and suppose the cut continued until it returns into itself, what will be the result? There are two ways of answering the question. One is the directly empirical one of making the cut. The other method is to endeavor to see before making the strip what must be the result in view of the one-sidedness of the strip. I once proposed the question to a class, and found a member of the class, who although not a student of mathematics, possessed a relatively clear visual imagination, was ingenious, became interested in the problem, solved it without cutting the strip, then tested his solution by an actual cut, and then brought me written out the process of reasoning whereby he had solved the problem.

The process of reasoning in question, or any process of reasoning by which the problem could be solved in advance of actually cutting the strip, is in part a genuine instance of deductive reasoning. Just because of the intimate mingling of empirical data and of exactly definable relationships, the case in question forms an admirable instance of the study of the genuine psychology of the deductive process; but I confess that no psychologist would make much of the study who was not fairly well acquainted with deductive processes of a certain complexity, – processes which in their more exact forms you will find anywhere in pure mathematics, where a symbolic language with an exact definition is used, as the only means of presenting data to the imagination.

Let me mention another instance of a deductive process of some complexity, but of great ingenuity and of interesting psychological relationships. We know that about 500 B.C. a member of the Pythagorean school discovered that granting the ordinary principles of metrical geometry as they were then and ever since have been used, the diagonal of a square could not be commensurate with the side of the square. The strictly deductive portion of this proof can be with fair ease distinguished from that portion of the proof in question which is indeed empirical and not deductive. That figures resembling squares exist is a matter of experience. That if you make a square exactly enough and large enough, and measure carefully enough

you will discover that by no rule you seem to be certain of stating the ratio of diagonal to side exactly in terms of whole numbers: this again is so far empirical. And the ordinary so-called axioms of metrical geometry, considered as principles about the constitution of the physical world, are of course generalizations from physical experience. On the other hand, the purely mathematical portion of geometry, that is, the purely deductive portion, consists in the discovery, not that the geometrical axioms are self-evident or otherwise certain, and not that the physical world has any properties whatever, but that certain assumed geometrical principles which can be stated wholly in symbols, actually imply certain geometrical conclusions. Now the early Greek geometer who discovered that the diagonal and the side of the square are from the point of view of geometrical theory incommensurable, was no doubt guided by the empirical difficulty of discovering any rule whereby a common measure for the diagonal and the side could be stated. Furthermore, he was not clear in his own mind as to the precise distinction between the deductive and the inductive part of his geometrical science. But he was possessed of the power to draw an exact deductive conclusion. And what he found out was that if certain principles of measurement and certain purely mathematical properties of whole numbers be admitted, the diagonal and side of the square are incommensurable. That is, he discovered that certain premises imply certain conclusions.

The process by which he discovered this we happen, though somewhat indirectly, to know. The instance is a remarkable one of the fecundity of the deductive process. The conclusion when the Greek reached it was a novelty. It seemed to him so novel and uncanny a conclusion that the Pythagorean school is said by a later tradition to have long regarded the whole matter as a mystery which must not be mentioned to the vulgar. It was reported that the man who revealed this mystery came to a bad end and received special penalties in the underworld, so closely in those days was exact science linked with *tabu* and with superstition. Yet no one who once goes through the little process of reasoning by which the ancient geometer established his result can remain without interest in the psychology of such a process.

V

You see throughout how my account of the whole matter is of course colored by my logical interests, and yet I freely admit that the psychological problems at issue ought to be considered without any undue reference to anybody's philosophical prejudices or concerns. I admit my own bias in the matter, merely because I am thereby enabled to call attention to what the live process of deduction is, and to point out that the recent psychology of reasoning has profoundly neglected to take account of some of the most elementary facts with regard to the nature of this process.

Charles Peirce long ago called attention to the general nature of the psychological processes which are in question in deduction. They are processes of the nature of ideal experiments. The instance of the one-sided strip of paper readily shows how many intermediate steps there may be between such ideal experiments and physical experiments with a strip of paper. On the other hand, as soon as you begin to reason, and to predict what will be true about a given strip of paper if certain hypotheses are met, with regard to its structure, you get an insight into the whole situation which you can not possibly get by cutting the strip of paper without adding the deductive process. And in general, wherever deduction is worth while, the testing of hypotheses after deductions have carefully been made whereby we predict determinate results of such hypotheses, has a wholly different value and interest from that which results from the testing of hypotheses without previous deduction.

The psychology of deduction may then well be characterized as the psychology of the *Gedanken-experiment*. The peculiarity of the experimental processes in question is that whether we use symbols, or diagrams, or mental images, our reasoning depends upon the fact that the objects in question are wholly under our control, so that in dealing with them we have no "course of experience," to use Charles Peirce's phrase, that is, no series of experiences which we have passively to await to see what they are, but are guided wholly by our own control, and are dealing wholly with objects which are what we make them. A given set of premises we construct in terms of symbols, diagrams, or figures, hereby expressing the meaning of these premises. Our deduction consists of the reading of this meaning from a new point of view. The fecundity of the process depends upon our power to combine at pleasure various constructions in various permitted orders and syntheses. The precise relation between such arbitrary objects, and the objects of ordinary experience, forms a topic of almost inexhaustible interest to the student both of logic and of the mental processes concerned.

I have thus indicated that the problems of the psychology of deduction have thus far hardly been attacked, mainly because psychologists have usually been so little interested in live deduction as it exists in mathematical science. So long as the myth still exists in text-books, that deduction is adequately to be represented by the form of the syllogism and the interpretation of that form which Professor Pillsbury cites and uses; so long as it is imagined that deduction merely lets out of the bag the cat that has already been put in it, our logic will languish and our psychology of reasoning will fail to fulfil the purposes of pragmatism or of any other doctrine of the reasoning process. So long as it is supposed that the main purpose of deduction is to produce belief in the conclusions, the psychology of certain of the most important human thinking processes must be lost. As a fact all tolerance, all considerateness in advance of action, all deliberate working out of ideal consequences of modes of behavior concerning which we deliberate, – all such processes would be

impossible. A great deal of toleration depends upon seeing how my opponent's conclusions are related to his premises, although I may have no belief either in his premises or in his conclusions. The process of deduction, in case of a practical deliberation concerning what it is best to do, helps us because we thereby learn in advance what *would* be the case *if* so and so were done, even if we ourselves have no tendency whatever as yet to decide in favor of the hypothetical course of procedure.

It seems to me then that the fecundity of the deductive process, the essence of the ideal experiment, and the genuine use of deduction, where it is not intended to produce belief but to give us insight into a connection of premises and conclusion, should form the topic of psychological studies such as thus far have attracted small attention.

VI

Some of the studies that I thus suggest may be of a nature to be treated by the methods of experimental psychology proper. I do not see why the psychological process of solving deductive problems that really illustrate the fecundity of deduction should not be, in certain cases, proper objects for detailed introspection. Let me mention a few possible cases. The one-sided strip of paper and a considerable number of related geometrical forms, may be made the topic of more or less direct experimental inquiry. Trained observers might undertake to solve such problems; namely, as deductive problems proper; that is, as problems of working out what conclusions follow from what premises. The deductive process proper could be separated in such cases from the special empirical materials used. And if the process is brief enough, or can be sufficiently well divided into stages to be the subject of introspection, there is much that is new to discover.

Let me mention another case of an extremely simple process of deduction of a type of which elementary mathematics is full, the process being one that involves a genuine ideal experiment and a genuine deduction. Almost anybody knows that if the sum of the digits of a number is divisible by nine, the number is divisible by nine, and conversely. Now let the psychological student be asked, if he does not already know the solution of the problem, *Why*, granting the ordinary principles of number, the numbers expressed in any decadic system must have this property. Let the ideal construction by which the problem is solved in a given case be a topic of introspection. The result could easily throw a light upon the psychology of reasoning which no discussion of the misused syllogism could possibly produce.

But the syllogism itself does indeed involve deductive processes that have a genuine fecundity. Mrs. Ladd-Franklin's theory of the syllogism, briefly restated by her in Baldwin's "Dictionary" and elsewhere, involves a deductive use of a construction which almost any psychologist can grasp with compar-

atively little trouble. The nature of the proof of the identity of the ordinary syllogism with Mrs. Ladd-Franklin's reconstruction, can be grasped by a process probably too complex to admit of any strictly experimental control. Yet if one once becomes familiar with this process and with repeated operations of it under controlled conditions, he would have material for the psychology of deduction.

There is another very fascinating problem in the psychology of deduction which has been almost wholly neglected. In my address before the Psychological Association years ago I called attention to the psychology of order as a problem still awaiting discussion. So far as I know, the problem has been little considered by psychologists since that time. But here is an aspect which presents curious phenomena. The relations "such as," "greater than," "to the right of," "to the left of," are transitive. That is, they follow James's axiom of skipped intermediaries. Now all those serial relations that can be expressed in these transitive dyadic relations can also be expressed in terms of the formally triadic relation "between." Thus, let *A*, *B*, *C*, *D* be four objects in a row. I can say, "*B* is to the right of *A*, *C* is to the right of *B*." I can conclude that *C* is to the right of *A*. And then I can define the relations of order in question. Now it is very easy to see that if *B* is to the right of *A* and *C* is to the right of *B*, *C* must be to the right of *A* so long as one interprets the relations of right and left as we ordinarily do. But suppose I give you the premises, "*B* is between *A* and *C*, *C* is between *A* and *D*," and ask you what follows. The conclusion is decidedly hard for most minds to work out. In other words, the triadic relations have a psychological difficulty which we do not feel in the case of the transitive dyadic relations, although we can express equivalent facts in both terms. The difference in question is hardly due to the fact that a set of three objects is more complicated to grasp than a set of two. For a little exercise in attempting to reason in terms of "between," as the geometers often do, will show that the psychological difficulty is out of all proportion to the numerical difference between two and three. The grounds for the difference in difficulty are presumably statable only in psycho-physical terms. But the matter is one for psychological research, and should be undertaken.

Over against these problems of the psychology of deduction which are possibly capable of a more or less direct experimental research, there are vast numbers of problems of deduction which can be attacked more indirectly, some of them by following the records of formation of new habits, some of them by means of more or less exact study of social processes. There exists, for instance, an indefinite range of possibilities for the study of the psychology of the arithmetical processes by a device which, so far as I know, has still been very little used, although I have repeatedly recommended it to students of educational psychology. We hear a good deal of effort to make out the details of the process whereby a child gets control of arithmetical computa-

tions. Now it is perfectly easy for any one to put himself near to the beginning of practical arithmetic and into a place where he has to learn very many of his habits as a computer over again, under conditions that will admit of a pretty careful experimental scrutiny of the way in which the new habits get formed, and which will enable us to make precise records of the growth of the new habits. The device in question consists simply in using, instead of our decadic notation and numeration, a dyadic, triadic, or other such system. Dyadic arithmetic is the simplest of all. In this one uses two digits instead of the digits from 0 to 9, inclusive. That is, one uses only 0 and unity; 1 standing alone will mean unity. If one uses two digits, the digit on the right will stand for units, the digit on the left for twos. The symbol 10 would now stand for two, the symbol 11 would stand for three, and so on. With the triadic system the places would be used exactly as in our decadic system. In the first place would be the units, in the next place to the left the threes, the third place to the left the nines, the fourth place the twenty-sevens, and so on. Now all numbers could be written in any of these systems. In starting with a new system, one could begin to perform additions, subtractions, multiplications and divisions, as with the decadic system. The possibility of an endless range of experiments, with mature persons, who, while retaining all their present arithmetical knowledge, would be instantly reduced to the position of young children, so far as some of the computations were concerned, all this makes an inquiry into the psychology of simple deductions of this type a very attractive one. Whoever wants to study psychology by becoming a little child has here a place for a wide range of study.

ON ABSOLUTE PRAGMATISM

Josiah Royce. "On Absolute Pragmatism." Selection from "The Principles of Logic" in *Logic*, vol. 1 of *Encyclopedia of the Philosophical Sciences*, ed. Arnold Ruge and Henry Jones (London: Macmillan, 1913), §21, pp. 120–123.

In our first section, the study of methodology showed us the relation of all scientific procedure to the Theory of Order. In our second section we have portrayed, in a largely empirical fashion, the Types of Order which characterize the exact sciences. Two of the concepts absolutely essential to the Theory of Order, we have already treated, indeed, so as to show *why they are necessary*. These are the concepts of Relation and of Class. For not only are these concepts actually used in the definition of every type of order, but as we have seen, *their necessity depends upon the fact that without them no rational activity of any kind is possible*. We have consequently insisted that these concepts unite in a very characteristic way – "creation" and "discovery," an element of contingency and an element of absoluteness. That a particular physical or psychical *relation*, such as that of father and child, should be present in the world, is as empirical a fact as the existence of colors or tones. That there should be physical objects to *classify*, this again is a matter of experience. And furthermore, every classification of real or of ideal objects is determined in any special instance, by a norm or principle of classification which we voluntarily choose. And in so far classifications are arbitrary, and may be said to be "creations" or "constructions." Yet, whatever else the world contains, if it only contains a reasonable being who knows and intends his own acts, then this being is aware of a certain relation, the relation between performing and not performing any act which he considers in advance of action. And thus relations amongst acts are in such wise necessary facts, that whoever acts at all, or whoever, even in ideal, contemplates *possible courses of action*, must regard at least some of these relations as present in the realm of his conceived *modes of action*. In a similar fashion, as we have seen, every sort of action determines a kind of classification of some world, physical or ideal. In so far, therefore, as the nature of relations and of classes in general determines the existence and the meaning of types of orderly activity, these types of orderly activity, and the order-systems which express their nature, are both empirical objects, "found" (since we experience their presence in our world); and are also *necessary* objects, because if we try to conceive that they are *not* there, our very conception involves modes of action, and hence restores these

necessary relations and classes to the world from which we had tried to banish them. We "construct" relational systems and classes in our ideal world. But we also "find" that at least *some* of these constructions are necessary.

A frequently asserted modern view, to which we have made some reference in the foregoing, namely the view called Pragmatism, asserts that all truth, including logical truth, has its basis in the fact that our hypotheses, or other assertions, prove to be *successful*, or show by their empirical workings that they meet the needs which they were intended to meet. From this point of view the logical hypothesis: "That there are classes, relations, and order-systems," would be true merely in so far as the acts of conceiving such objects, and of treating them as real, have, under the empirical conditions under which we do our thinking, a successful result. And thus logical truth, and the logical existence and validity of classes, of relations, and of the various types of order, would stand in the same position in which all the "working hypotheses" of an empirical science stand. These order-systems would exist, and their laws would be valid, precisely in so far as such ways of actively conceiving of the world have successful workings.

But, in the foregoing, we have already indicated that, so far as the existence of classes and of relations in general is in question, and in so far as the validity of certain logical laws is concerned, we are obliged to maintain a position which we may characterize by the term Absolute Pragmatism. This position differs from that of the pragmatists now most in vogue. There are *some* truths that are known to us *not* by virtue of the special successes which this or that hypothesis obtains in particular instances, but by virtue of the fact that *there are certain modes of activity, certain laws of the rational will, which we reinstate and verify, through the very act of attempting to presuppose that these modes of activity do not exist, or that these laws are not valid.* Thus, whoever says that there are no classes whatever in his world, inevitably classifies. Whoever asserts that for him there are no real relations, and that, in particular the logical relation between affirmation and denial does not exist, so that for him *yes* means the same no, – on the one hand himself asserts and denies, and so makes a difference between *yes* and *no*; and, on the other hand, asserts the existence of a relational *sameness* even in denying the difference between *yes* and *no*.

In brief, whatever actions are such, whatever types of action are such, whatever results of activity, whatever conceptual constructions are such, that the very act of getting rid of them, or of thinking them away, logically implies their presence, are known to us indeed both empirically and pragmatically (since we note their presence and learn of them through action), but they are also absolute. And any account which succeeds in telling what they are has absolute truth. Such truth is a "construction" or "creation," for activity determines its nature. It is "found," for we observe it when we act.

It consequently follows that whoever attempts to justify the existence of any of the more complicated systems of order that we have been describing in the

foregoing section, has a right to seek for some absolute criterion, whereby he may distinguish what systems of order are necessary facts in the world, – that is, in the world that the logician has a right to regard as necessary, – and what, if any, amongst these forms are either capricious, and unnecessary, or else are suggested by the particular facts of experience in such wise as to remain merely contingent.

The logician's world is the world of hypotheses, and of theories, and of the ideal constructions that are used in these theories and hypotheses. Now theories and hypotheses may be merely suggested to us by physical phenomena, so that, if we had different sensations from our present ones, or if our perceptions followed some other routine than the observed one, we should have no need for these hypotheses and resulting theories. In so far, the hypotheses are contingent, and the theories have only conditional value. Furthermore, some of our activities are indeed arbitrary, so that we may, as the common expression is, "do as we like." And when such modes of activity play their part in the choice or in the definition of our hypotheses, the logician cannot regard them as necessary. But, such logical facts as the difference between *yes* and *no*, are not dependent on the contingent aspect of our sensations, but on our rational consciousness of what we intend to do or not to do. Such facts have not the contingency of the empirical particulars of sense. And some modes of action, such as affirmation and denial, are absolute modes.

We can indeed suspend the process of affirmation and denial, but only by suppressing every rational consciousness about what we ourselves purpose to do. The particular deed may be arbitrary. But the absolute modes of activity just suggested are not arbitrary. We cannot choose to do without them, without seeking to choose, since choice is action, and involves, for instance, the aforesaid difference between affirming and denying that we mean to do thus and thus.

THE SOCIAL CHARACTER OF SCIENTIFIC INQUIRY

Josiah Royce, "The Social Character of Scientific Inquiry." Lecture Three of "The 1914 Berkeley Conferences" in *Josiah Royce's Late Writings: A Collection of Unpublished and Scattered Works*, ed. Frank M. Oppenheim (Bristol, UK: Thoemmes Press, 2001), vol. 2, pp. 20–39.

In giving at the outset an outline of the plan of this course, I emphasized the sharp distinction between the task of our first and second lectures and the task that lies before us in our third and fourth lectures. We have dealt with some illustrations of the theory of loyalty; now we are to consider certain problems of the theory of knowledge. As I warned you at the outset, these problems seemed to be in some respects remote from one another. What we have dealt with is the practical question of a significant plan for the conduct of life.

The doctrine of Loyalty asserts that you begin to find the meaning of life in so far as you discover the social group to which you belong, to which you are devoted, in the name of which you speak. The doctrine of Loyalty, as we have said, is in a sense the doctrine of salvation, for as I have insisted, the individual considered as a detached individual is essentially a lost being. He has not found himself, he cannot find himself until he discovers the group to which he belongs, until he is in love with the community. The doctrine of Loyalty, then, has been called by friends of man "the doctrine of salvation through team play," and such a doctrine it indeed is. Such a doctrine we have suggested. From its problems and interests we for the moment somewhat abruptly turn....

My next problem may be stated in this form. Human knowledge exists in many forms. Of these various forms two have proved to be especially important in the history of thought. The first form is the one that has been very largely represented in the history of philosophy. It has also found an expression in certain very highly technical branches of scientific inquiry, as for instance, in mathematics. The other of these two forms of investigation has found its most noted expression in the physical sciences. The contrast between the two types of knowledge which are here in question, and between the two kinds of investigation which we want to analyze, is somewhat familiarly expressed in the following form. Some of man's knowledge seems to be due mainly to the use of what is commonly called his reason. Some of his

knowledge appears to be due to what is also called commonly his experience, taken just as his experience comes. The theory of knowledge has to consider the two kinds of knowledge which are thus distinguished. And we may state the question that lies immediately before us by asking: How far is man's knowledge of the world due to reason? How far [is it] due to experience?

The question with regard to the relation between these two kinds of knowledge is fairly exemplified by the historical contrast between the sort of investigation which is more strictly philosophical or technically mathematical, on the one hand, and the sort of investigation which especially characterizes physical science on the other. We need to find out something about the methods which guide man in his more distinctly rational inquiries. We need also to become acquainted with the methods that guide man in his study of the facts of experiences....

[Moreover], in the history of human thought, the rational method of inquiry is exemplified by many systems of philosophy and is also exemplified by some portions of the inquiries of the mathematical sciences. This method has been brought in a very interested relation to a certain practically significant attitude of the inquirer. The rational inquirers, the constructive and creative philosophers, and again the mathematicians have been largely guided in their inquiries by the interests which again one may see in the history of thought as the interest of inquirers in forming opinions for themselves. Consequently, the interests which have been strong in the minds of rational inquirers have often been interests that were in their very nature what one may call individualistic interests. That is, the deductive methods have been very largely used by thinkers of an individualistic type. On the other hand, the students of the special empirical sciences have shown from an early period in the history of modern science a very strong tendency to a mode of inquiry which has involved, in a very interesting way, what I have already called team play....

We are just at the moment especially interested in the fact that this mode of inquiry into nature and into the meaning of life which the Greek philosophers began is not yet identical with the modern scientific method of inquiry. It is identical with a method which for long dominated the history of philosophy. That method of obtaining knowledge [which] I have already in general characterized as predominantly deductive, is a method which, whatever else it involves, depends upon thinking for yourself.... A great part of the history of Christian thought depends upon the effort which was always natural to the Christian consciousness to find what should be the proper relations between independent inquiry and tradition. And because of the direct or indirect influence of the Greek spirit, theological prejudice has never been able to stifle independent opinion in the minds of the Christian world.... We may sum up this sketch of a very complex subject by speaking of the deductive type of thinking as on the whole the individualistic type of thinking....

Thus, for instance, much as the early Greek thinker thought for himself, so at the outset of modern philosophy, Descartes throws aside all he has gained from tradition, declines to take notice of theological traditions, undertakes to doubt everything, and supposes himself to reach entirely original philosophical methods. Later in modern philosophy, while we have a constantly increasing sense that the individual philosophical thinker is making use of previous thought, and is dependent in a way upon previous philosophers, still there is the strong tendency which appears in new form whenever a contribution to philosophy takes its place in the world of thought – a tendency to make the right to think for oneself especially prominent....

Now in a very interesting and sharp contrast to the methods which have thus determined a great portion of the history of philosophy stand those methods which have become prominent in modern investigation. These methods have a very interesting character....

I may indicate the practical nature of the issue which is in question if I repeat that the methods of modern natural sciences are essentially the methods of team play. These methods are indeed very different methods of team play from those which were prominent in primitive thought. For the Greek spirit of individual and independent inquiry lies between primitive thinking and scientific thinking, and has profoundly influenced the spirit of the latter....

The methods of the natural sciences are largely those of induction, that is, they are methods that have to do with collecting the facts of experience and making generalizations upon the basis of these facts. But these methods have the curious combination of character to which I have just made reference. Let me enumerate these characters. First, the inquirer whose work lies mainly in the field of special empirical science is indeed interested in independent investigation. Secondly, ... the individual scientific investigator depends upon the work of his predecessors precisely in so far as that work is needed from the point of view which he deems important.... Thirdly, for this very reason the scientific inquirer has certain characteristics which are not prominent in early Greek philosophy, but which were prominent in the more primitive kind of thinking which savages and which the teachers of early civilizations had. As the savage was dependent upon the customs and the beliefs of his tribe, as the believer in any of the forms of religion which characterize the early civilizations was dependent upon the lore of his priests, or the traditions of his faith for the greater part of what he supposed to be his knowledge of the world, so in a very interesting fashion the scientific inquirer is dependent upon the work of other men. The scientific worker is suspicious of any extreme individualism in thinking, just as he is suspicious of too great use of deductive methods. He indeed demands of the scientific investigator a certain independent thinking. But at the same time he insists upon the fact that each such scientific investigator must depend upon the previous work accomplished in the science.

To sum up then, this suspicion of what one may call individual caprice in science, this tendency to limit somewhat strictly the range of one's independence of thought, this dependence upon the work of previous scientific investigators, all these features characterize the work of the special empirical science....

What I want to emphasize is that this distinction of methods is at once practical and theoretical. It corresponds to a distinction in the ethical life of mankind which has been of great importance.... The methods of the special natural sciences have indeed been methods dependent upon experience. But that is not their most important practical significance. The methods of the special sciences are allied to the methods of working together which constitute the most significant feature of the practical life of modern humanity.... There is, then, a very close connection between the ethical attitude of the scientific inquirer and the characteristic attitude of the loyal man. Both the loyalist and the scientific man combine an interest in the unity of the social order with a respect for individual freedom of inquiry....

The question whether philosophical methods can always become scientific is one of the burning questions of philosophical discussion at the present day. There is no doubt of the propriety of the effort to ally the methods of philosophy, the methods of inquiry which have been prominent in the past, with the methods of team play which characterize the scientific inquirers and the actual inductive investigations which they carry on. I am perfectly ready to say that the philosopher of the future will become increasingly scientific in his methods.

What I am interested now in emphasizing is that in so far as this takes place, philosophical thought without ceasing to be independent thinking and to use individual inventions and the freedom of individuals, will become increasingly loyal in method, will be more and more an effort to express, as the natural scientific method expresses, the purposes, the insights, the discoveries of the community.

Of course, that the real facts of nature are facts which exist for many people, we can all of us notice in dealing with the most ordinary matters of natural knowledge; and common sense, like the primitive man, is always social. Man, the gregarious animal, has always regarded nature as in some ways common property of the experience or knowledge of the group or the tribe. Men have always been more or less aware that the natural facts are those which we in common observe and can use. As a gregarious animal, man is fond, of course, of this common, of this social experience of natural facts. But it is characteristic of the development of modern science that what thus lies deeply grounded in the gregarious nature of man has become conscious so that just as man the gregarious animal becomes loyal when he has first become investigative enough to become aware of how much he loves his chosen social group, so man, the gregarious observer of nature, man the

animal that always tended to hunt in packs and to fight in groups and thus to take over the common experience as the property of each individual man, becomes on the scientific level clearly and consciously aware that he distrusts private individual observation unless this receives the systematic confirmation of the group.

Thus then the scientific methods like the practical methods of the loyalist depend upon a clearly conscious interest in the common social interest. We have later to see how the scientific method of knowing nature is bound up with the ideal and positively significant aspect of the loyal practical consciousness which I tried to illustrate in our opening lectures....

To sum up our results: whatever the methods which are characteristic of the natural sciences, they depend upon and express a very clear and conscious recognition on the part of the scientific inquirer in the range of inductive science that the truth which he seeks when he deals with nature is truth that belongs to the community. And thus the methods of inductive science and the practical attitude of the loyalist have an intimate and close connection which we need to understand somewhat better than we usually do....

Hence, there is at present no more powerful teacher of Loyalty than the scientific spirit. And for that very reason there is no more significant mode of bringing about the world peace, concerning which we hear so much, than spreading not merely the scientific spirit but its application to human life....

I now wish to call attention to the connection between induction and the scientific spirit which was first emphasized by the man whom I named in my opening lecture, Mr. Charles Peirce. The contribution of Charles Peirce to the logic of the inductive method is a very technical contribution.... Our scientific methods depend upon certain methods which are not only methods of observation but also methods of reasoning. The methods of reasoning, in so far as I call [them] technical inductive methods, stand in a fairly sharp contrast from the methods used, or at least predominantly used, in the mathematical sciences.

Deductive methods are those familiarly known to you in computation of all kinds. Granted the items that are entered in an account book, the making up of the balance sheet of a commercial institution at a given moment may be, after enough of these items have been collected, a matter of computation. A computation is deduction....

But the special natural sciences make use not only of experience but of a set of methods which are predominantly inductive. Of course in a general sense they are rational methods, for they require a very high degree of intelligence. But they are methods which are essentially bound up with the interest in collecting and of course in systematizing our human experience. Now, one who makes use of the inductive method of course infers. That is, he draws certain conclusions from certain premises.

His premises are assertions about what he in his reasoning already supposes to be true. Just as one who computes the tables of the nautical almanac, in

so far as they deal with lunar distances and eclipses and such facts, presupposes as true certain premises relating to the laws of motion of the heavenly bodies, *just so* an inductive inquirer presupposes certain premises which are in general known through the experience of observers, or, as we have said, through the experience of the scientific community. He engages in inductive inferences when he draws a conclusion to the effect that if these presupposed premises are true, then this and this inductive inference can probably be made. The simplest example of such an inductive inference which happens to have found a prominent place in the elementary textbooks of logic is the inference which we make regarding such laws of nature as are popularly expressed by saying, "We human beings must all of us die; we are mortal." Another simple instance of the inductive inference, also rather frequently used in logic textbooks, is the inference that the sun will rise tomorrow....

An inductive inference differs from a deductive inference in the way which Charles Peirce always from the outset of his work emphasized as a much more essential difference than the older logic textbooks were supposed to recognize. An inductive inference, as you can see from the case about the sun rising tomorrow, or the inference about the dying of men in the future, is an inference which has no necessity about it.

On the contrary, it is what one may call a probable inference. If the sun has long risen, then it is probable that the sun will continue to rise. If men have constantly died up to the present time, it is probable that the mortality of men will continue. Since all our knowledge of the special facts of nature can be expressed up to the present time in the form of certain statements of premises which express the results of observation, all our inductive inferences have the character just pointed out. That is, speaking with the strictest carefulness about how far an inductive inference has validity, we may say an inductive inference is probable. If the premises are true, then the conclusion is not indeed certain or necessary, but probably follows. Therefore, for the purposes both of logic and of the general theory of knowledge, inductive inference is [an] essentially probable inference. It lacks the necessity of inference.

And the problem about the so-called technical theory of induction is this problem: What is meant by saying a certain inference is probable? The importance of this technical question, at least for logical theory and also for the general theory of knowledge, appears when we reflect that all our present knowledge about nature, in so far as we can express it in inference, takes the form of this kind of probable inference. The sciences, in so far as they are natural sciences, do not [possess][1] a deductive and necessary character, like pure mathematics, or like the sort of knowledge which you have whenever

[1] Emendation of "consist in" in the typescript version.

you compute the sum of a column of figures. Our knowledge of nature, all of it, has the inductive character. We cannot say that, if our observations are correct, such and such laws of nature must in future follow such and such processes. We can only say that it is probable that these and these are the laws of nature. It is probable that in [the] future nature will follow this and this course, just as it is probable that the mortality of man and the sunrise will continue for a great while....

So then, to face at once the central technical question, what do I mean when I say that, if certain premises are true, a certain conclusion is probable? What is this probability? What is this curious predicate "probable," which is not identical with the predicate "true" and not identical with the predicate "false." For what does this predicate stand? It is a predicate especially forced upon us by the limitations of our experience. We should all like to know what must be true. In dealing with nature and with life, we all have to put up with what is probable. It is a perfectly fair question: Wherein consists the nature of probability? In what sense is something probable? ...

Hereupon let me state the answer which Charles Peirce in his logical researches early proposed to this question. For the moment I state that answer dogmatically. I shall try to show you its practical bearings and to illustrate them briefly. Charles Peirce's answer was simply this. When I tell you that a certain proposition or inference is probable, I mean something which refers not probably to anybody's state of mind, but most decidedly to the world of fact. I mean something that can be expressed in statistical form. When I say such and such a proposition is probable, I mean, if I do not specify more definitely the probability to which I refer, I mean in general as a matter of fact a proposition of that kind [which] is more frequently true than false.

An illustration will show you how such a proposition can be made not only for things such as refer to probability in general but such as refer to some very definite probability. When an insurance company decides upon the rate you have to pay for a policy on your life, the insurance company speaks of your expectation of life, or of some other interesting character of fact or assertion about your life and its chances in perfectly definite and statistical terms. When you say, "I shall probably be alive tomorrow, or a year from now, or ten years from now," you may be expressing merely your state of confidence or doubt. This state may vary with your moods, with anything that happens to make you confident or doubtful about your life. And the word "probability" thus used has no scientific significance whatever. Probabilities that assert merely states of confidence or of doubt have interest as features of your private experience. They have no interest for the insurance company.

When the insurance company speaks about your probability of life, or about your expectations of life, its assertions are reports of fact, not about you individually, but about a group of persons to which you belong. In speaking of the probability of your living ten years, the insurance company makes use

of some report of facts which enables them to say, "Persons of the class to which you belong – and in particular of the age and health and constitutional history which you are able to show – persons of this class or group are such that such and such a percentage of them live ten years, or will be alive at the end of ten years from a given date. If, for instance, this man is thirty years old, there is a certain probability that he will live until sixty. That is to say, a certain percentage of a large group of men who are in good health and thirty will be alive at sixty. In terms of such assertions about facts, the insurance company makes all those assertions about the probability of life which lie at the basis of its estimates of the value of a premium which a man ought to pay."

So then, when I say without specifying, "This proposition is probable," I mean this proposition belongs to the class of which most member [propositions] are actually true. When I specify the probability and say what the betting man asserts when he bets on odds, and what the insurance company says more exactly when it issues a policy, "The probability of this proposition is such and such a percentage of a unit of probability, or of what may be called simple truth," then I mean this, so long as I am speaking not of a state or mind, but of facts. I mean this proposition belongs to a class of propositions of which in fact an observation shows a certain proportion are true. I do not know this proposition is true, but I may know that it belongs to a class of which 50%, 10%, 1%, or 99%, and in extreme cases, 100%, are true. The extreme case, of course, would be identical with one saying, "This proposition is true." The case where one says it has such probability is the case where one can assert the statistical proposition which I have just exemplified.... Thus all assertions about probability, and in particular all assertions about inductive inference, are assertions that possess a probability which is always definable in terms of facts, that is, in terms of statistics. Having used these illustrations, I must ask your patience for one more thesis which is characteristic of Peirce's theory of induction, and which makes me call the theory the insurance theory of induction.

The practical significance of these considerations may more clearly appear if one lays stress upon a matter which Charles Peirce was, I think, the first to point out. If this view concerning the meaning of the term "probability" is the right view; if, when I speak of the probability of a judgment, I do not refer to the degree of confidence which I have in that judgment; if, when I speak of the probability of an inference, I am equally not laying stress upon the degree of confidence that I feel in that kind of inference; if, on the contrary, in both of these cases I mean by the probability of an assertion or of an inference this; namely, that in the long run a certain proportion of the assertions or inferences of some definable class are true, then the effort to make my assertions probable and the effort to make my inferences probable becomes an important effort only when, not my private interests, but those of a community are concerned.

In fact, it is the interest of the man who follows scientific methods, not that he should increase the degree of confidence that he personally has in his methods, in his assertions, or in his inferences; it is his interest that he should so assert and so infer that as large a number as possible of inferences of the type in question are true. And in consequence it is his interest that the community of scientific men should be guided by methods which, never infallible and frequently erroneous, are, nevertheless, in the long run actually true in as large a proportion of cases as possible. The interests of the inductive reasoner, the interests of one who uses scientific method, are interests in the success, not of the individual scientific reasoner or investigator, but in the scientific community. Scientific method is never infallible.

On the contrary, all the results of scientific method are subject to error. And the scientific community, the group of those who are engaged in carrying on scientific research, gains on the whole by following the scientific methods and by using the other methods of inductive inference. Because by such methods and by such modes of inference the proportion of correct judgments, and the proportion of correct inferences increases and actually tends toward a maximum.

As Peirce was the first clearly to point out, if man had no social interests, if, for instance, he were thinking only of the salvation of his own soul, and if for him the salvation of his own soul were something of such interest that the whole world itself would be to him not so valuable as the salvation of his own soul, then when that man made a probable inference, he would be taking a risk too vast for him to estimate in terms of any reasonable use of the term probable. Such a man would be like one who was asked whether he was willing to take a risk that was greater than all the gains that he could possibly hope to make at any future time in case just that risk happened to go against him. Such a man might, indeed, take such a risk, but there would be no reason why he should do so. He might say, "I believe that if a thousand men take this risk, only one of them would fail." But if he had to add, "If I take this risk and fail, I should lose absolutely everything in this world and in the next," then you could give this man no reason why his decision should be determined by saying, "It is probable, or the odds are a thousand to one that this judgment of mine should be right." If this man would have to think, "If this risk went against me and if I lost my own soul, or lost everything else in the universe that is valuable to me, and if indeed my interests alone are to be considered in thinking of this decision of mine, well, then, if I am willing to take so small a risk of losing everything, my soul included, that willingness is due simply to my own boldness, or to my own indifference to the fate that may happen to me. There is no reason why I should take this risk even if it is represented by a small fraction of what is called probability, or on the other hand, by a fraction that is very near to unity, and that so suggests that I am myself concerned that the risk will turn out in my favor. "For whatever you call the probability," so this man might say, "what

is at stake for me constitutes everything that I value. So if I am simply prudent, I will take no risks. On the other hand, if I choose to take this risk, I can give no reason by simply using the word 'probability,' or by merely mentioning the fact that only a small proportion of such risks if taken would turn out failures. All that kind of reasoning would leave me free to decide whether I personally choose to take that small risk or not."

Entirely different, however, would be the situation which is actually the situation of anyone who is reasoning about questions of natural science, or about those problems of common sense in dealing with which we use scientific methods. Such a person would say, "When I declare that a certain proportion of the assertions or inferences of a given type turn out to be correct, my assertion bears not merely upon my possible choices, or decisions, or successes or failures, as a detached individual. When I speak of the probability of scientific assertion, or of inductive inference, I am speaking in the name of the large community of scientific investigators. I am interpreting the will of that community. That community desires that in the long run as large a proportion as possible of scientific assertions and inferences should turn out to be correct ones. It is possible to declare that that proportion can be increased by using certain inductive methods, or as they are called, scientific methods. These methods have been themselves found by the experience of the community. They can be analyzed with considerable accuracy by the inductive logician, that is, by the student of scientific method."

It is the will of the scientific community, then, that these definable methods, which tend to increase the proportion of scientifically correct judgments and inferences, should be followed, and that other methods should be avoided. When the community, the scientific community gets its will expressed, nobody can guarantee to the individual scientific worker who makes this inference on this occasion that his inference will be correct. And nobody wants to guarantee to him this assurance. Nobody can probably tell the individual scientific worker how confident he ought to feel. How confident a man actually feels is a matter that concerns, indeed, his own private personality. It may satisfy his soul to feel confident that his inferences are correct but this feeling of his has no bearing upon the scientific importance of his inductive methods. What is important is to know whether, in case the scientific community follows that kind of method, it tends in the long run to success, and what it also interests us to know, approximately or roughly, the proportion of successes resulting during the life of the scientific community from following good methods of inductive inference, good methods of scientific observation, good method of stating and using assertions, hypotheses, and other means of expressing scientific opinions.

The inductive logician hereupon says to the individual inquirer [about][2] things, "Observe thus, infer thus, and your inferences or assertions will be of

[2] Emendation for "that" in the typescript version.

the type such that if the methods which you use are universally employed in the scientific community, a large and increasing number of scientific assertions or inferences will be actually true." From this point of view, it is of the very essence of scientific method that it concerns the interests, not of the detached individual, but of the community. It is the essence of inductive inference, where it has an exact and scientific character, that whether or not it happens to increase the confidence which somebody feels, and whether or not it leads to truth or to error, it does on the whole if followed lead the scientific community to an increasing proportion of cases of correct predictions, of accurate inferences, of verifications of hypotheses, and so on.

Throughout his writings Peirce is fond of expressing this view of the nature of scientific method by saying that scientific inferences, in so far as they follow precise method, are inferences that have an insurable value. The investigations of science are of very widely important practical applications. But it is not necessary for the logician to confine himself, or even devote himself very largely, to considering the practical applications of science in order that he may know what constitutes good scientific methods. The logician may entirely ignore the fact that applied science is practically very useful. When be speaks of the insurable value of an assertion or of an inference, he means according to less substantial things.

Suppose every error of the scientific investigator were scored by some omniscient insight as a disaster, as something of the nature of an explosion, a fire, a death, or whatever calamity you please. Suppose when one speaks of the probability that a certain scientific assertion or inference is true or erroneous, one were speaking in the name of the community of scientific observers. Then one would deal with the value of a scientific method and with the policy which ought to be pursued by a scientific observer, investigator, or inquirer, very much as one speaks of how the conduct of the individual should be guided in cases [wherein the][3] individual has to take risks, while the risks could be insured.

As you well know, if an individual man considers the future of his own house, or of his own life, he may feel all sorts of degrees of confidence as to whether his house will or will not be burned, as to whether he individually is to survive a year or is not to survive. These feelings are personal. You can give a man no rules as to how they [these feelings] should enter or should influence his life, unless, indeed, you lay stress upon the. kind of man he is and the kind of value his personal affairs have in his life. But if you were addressing the men of the community, and if they are already able to form themselves into associations, or to bring themselves under the care of corporations that take interest in fire insurance or in life insurance, or any other kind of insurance, then you can say that it is reasonable for the people of such a

[3] Emendation for "that" in the typescript version.

community to guide their conduct according to what is called the insurable value of a risk.

Suppose as a fact we could say that a certain proportion of houses of a certain type, in a certain portion of the country, or in the country at large, or in cities of a given size, do burn within a year from a given time. Then we can say to the individual: No matter what you hope or fear, the community loses yearly such a proportion of the houses of this type. If the community meets this loss in any steady way, it provides a fund, represented perhaps by the accumulated funds of the insurance corporation. From this fund or from similar funds such losses are met. If your house, or your life, or any other possession of yours, constitutes an insurable risk, that means first, that whatever your hopes or fears may be, the damage done, to the beneficiary in favor of whom you might insure, the damage done if your individual risk turns out well, can be met, in case the corporation or the association which is ready to insure you, receive a certain premium, and hereupon contracts that, in case your risk turns out well, your beneficiary shall receive a certain compensation.

If the risk in question is of a sort concerning which no useful statistics can be, or have been, collected, or if your risk is such that it cannot in any reasonable way be classified at all, then your risk is uninsurable. But if your risk can be put into a class, and if the insurer can be found who will insure that risk for the sake of a certain beneficiary, then, while nobody can tell you anything about what will happen to you or to your individual risk, or to any other detached individual, one can say, as the insurance company says, "Your risk can be fully covered for such and such a premium."

Now, as in the practical world there are communities that together suffer from all the failures that come to individuals with regard to unexpected death, or fire, and as in the practical world, just because [there][4] are such communities, just because "no one liveth to himself and no one dieth to himself," just because nobody's fire loss is merely his own, but does affect his possible beneficiary, his creditors, his heirs, his assigns, or others, therefore the devices of insurance enable losses to be in a sense made good to beneficiaries, *just so* in the work of scientific investigation, if for the time being you regard all errors as disasters or as failures, and as in that sense similar to fires and deaths, you can view the whole situation in this way.

The scientific community is interested in successes. A logician who defines in an abstract way the plans of the scientific community, that is, who advises what scientific inference ought to be made, would be glad if he could say to the individual, "Reason thus and thus, and your conclusion will be true if your premises are true." If the logician could say this [of at least][5] the portion of the

[4] Emendation for "they" in the typescript version.

[5] Emendation for "or in" in the typescript version.

scientific work of which he could say this, [then] his reasoning becomes deductive and necessary, and his conclusions must be so, granting their premises.

But in the field of inductive inference the logician can give no such precise rules. He cannot say, "Infer this and this from such and such premises, and your conclusions are sure to be true if your premises are true." He can say to the individual investigator, "I cannot tell you whether your inferences are correct or not. For you are engaged in inductive inferences whose premises do not secure the truth of their conclusion, whose reasonings have only a probable value." What the logician means by this probable value is that which has now been explained, "I can tell you [that] if you infer thus or thus, the method of your inference is such, that if the scientific community consists of people who follow such methods, a more or less exactly definable proportion of the inferences made by such a scientific community will turn out to be right inferences."

The inductive logician can therefore continue, "My comment upon scientific method no more assures the individual investigator of the correctness of his inferences than the insurance agent, or actuary, or other representative of an insurance community, can tell the individual when his death will occur, or whether or not his house will be burnt." What I, the logician, can say, speaking in the name of the scientific community, is something of this sort. "If you, the individual investigator, regard the work that you do as an investigator, as an observer, as a reasoner, as your contribution, as, if you please, the premium that you pay for the result that you want to secure through making this contribution to the work of science; [again] if you regard as your beneficiary so much of the scientific community as happens to continue to follow your methods, in your branch of science – that is, if your beneficiary is the group of scientific investigators to which you belong; [and again] if you regard the whole community which insures you as the whole body of scientific investigators in this and in all future time, *then, indeed*, I the logician can say to you this:

By the premium that you pay in following good methods as well as you can, you in the first place insure that, in so far as your methods are followed by your science, the little community of workers (who work in your science and according to your methods) shares in whatever benefits accrue in the long run to the whole body of scientific investigators. Inductive science will often fail precisely as commercial enterprises often fail. Thinkers and sciences will go wrong, as they have often gone wrong in the past. For instance, the medical science of today will be so altered by future knowledge that the most of our present textbooks, and some of them very quickly, will become useless. There is no road that leads with assurance to any one desirable set of scientifically true assertions and inferences. There is no scientific security against those disasters called errors, which we have compared for the purposes of this argument to fires, to deaths, and to other calamities.

But this can be said to the individual worker in some difficult and rapidly changing science, such, for instance, as a medical science: There are certain inductive methods which can be shown to tend towards producing a large proportion of correct rather than erroneous inferences that one can say the great scientific community – the community of all the investigators who follow good methods of scientific research – does tend in the long run to make an increasing proportion of correct scientific inferences. Hereby various benefits, some of them in the actual sense practical, some of them with far-reaching theoretical significance, tend to come to humanity. In these benefits your science will share, if you help your fellow-workers to follow good inductive methods, or if in your own way you tend to create the minor community of your special science, which by making the good type of inference conforms to precisely that sort of thinking which leads the total scientific community towards a continual progressive power to discover the truths of nature.

To the individual worker, then, the inductive logician gives the command, "Work thus and thus. That is, apply to your problems these inductive methods." The individual scientific worker is in general doing what he can to form and advance his own science. In doing his work he offers aid to his science, which may be regarded for our present purposes as beneficiary. The relations of the whole community of scientific workers to the natural world of our human experience are such that this scientific community taken as a whole is sure to progress, and is sure now that scientific method has been discovered, to follow the methods which an inductive logician endeavors to define. Once more, then, to the individual worker the logician can say, "if your methods are sound, your scientific results have an insurable value."

One may express this insurable value in these terms:

For your community you the individual worker have paid the premium by your work in accordance with scientific method. Hereupon, so far as in you lies, you have insured the result that the general tendency of science to progress will through such aids as this accrue to the advantage of your science. That is, to continue the same metaphor, By your payment of your service, you insure your beneficiary a certain right to share, in the long run, in the indefinitely extended future progress of science.

The individual worker may fail; his beneficiary – that is his own science – may in time pass away from the field of scientific interest as Alchemy did, as Astrology did, as several forms of psychical research have already done, and as very possibly some other forms of psychical research may yet do. But so far as such matters are matters of scientific investigation at all, what interests the individual scientific worker is the fact that he can do work, that is, to continue my metaphor, he can pay a premium, which insures for his science – that is, for the company of those who work with him in the same scientific field – the general advantage of the scientific community. And the sound

inductive methods are those which, however often they fail in the special case, will always tend toward the progress of the scientific community as a whole, precisely in so far as such methods are persistently followed.

This is what I mean by the insurance theory of induction. It depends upon taking note of a real analogy between inductive inference and the methods of the various special sciences and the practical procedures upon which insurance companies are based. Extremely significant for the student of the practical philosophy of loyalty is what Peirce points out in his first essay upon the subject; namely, that inductive logic can have no interest for a man who was concerned only in the question as to whether his own personal and private inductive inferences were true or not.

As nobody would insure [that is, would obtain insurance] who had not in some sense defined a beneficiary, to whom his insurance would be paid if it became due – even if this beneficiary were, as in fact he often is, the future self of the person insured; [again] as nobody would insure who is not prudent enough to think of his own future self and not socially minded enough to be interested in some beneficiary – for instance, in his family, or in his creditors, or in his heirs; and [again] as nobody could insure unless there were a community to which he belonged, and in which the results of the manifold risks, successes, and failures lead to some accumulation of the results of success and failure; [and] in brief, as insurance is impossible except for members of communities who take interest in some aspect of the welfare of their communities, and whose communities take in some respects an interest in the welfare of their individuals, *so* nobody could have any logical interest in scientific method, unless he were a member of a scientific community and unless his affairs were bound up with the affairs of other inquirers.

It is with good reason, then, that the inductive sciences have grown up with the appearance of new types of social order. Independent and individual thinking plays its part in science, precisely as it is essential both to scientific discovery, and to philosophical creation and investigation, but when scientific method takes the form of inductive inference, it takes a form which is one determined by the relation of the individual investigator to the labors of the scientific community.

Of course, in order to make all this doctrine precise, and in order to explain in detail its meaning, I should have to show what Peirce tries to show at length; [namely,] (1) how we find out that a certain type of scientific inferences is such that if they are steadily pursued, and more or less definable, a large proportion of these inferences will be correct; and (2) how we also can show that this proportion of correct inferences tends for the whole scientific community steadily to increase. But that, as Kipling would say, is another story. That is the theoretical, the most important part of an inductive logic.

I can here speak only of this one fragment of the theory of inductive inference. The picture which Peirce gives you of the work of an inductive

science is on the whole as follows: A method of using experience has been found which any individual investigator can within his own limits apply and which becomes especially significant because a great many people can apply it together. This method is applied in the course of the history of science, and, as we may reasonably suppose, will be applied in an indefinitely long future, by what we may call the scientific community, that is, the whole body of workers who make use of such methods in dealing with nature. The nature of the methods in question is such that for this community in the long run there are, indeed must be, an advance on the whole in proportion to the correct inferences made. That is to say, there must be such an increasing proportion of correct inferences if the natural world which we study has, as Peirce would say, any definite characters whatever, any definable constitution, any order in it.

Peirce has shown that we need not presuppose the natural world to be what is often called uniform, or to be what many philosophers have defined as reasonable, in order to be sure, and sure in ways that of course involve some deductive inferences, that the scientific methods applied by the scientific community will in the long run lead to an increasing proportion of correct inferences. But it belongs to the special discussion of the theories of inductive logic to point out why this must be the case and why the scientific community as a whole must tend to a genuine scientific progress so long as investigation keeps on uninterrupted....

When a new science begins, it may run out in failure, or at least in relative failure. Nobody can guarantee to a new science success.

Within the field of each science there are individual workers. Nobody can guarantee to any one of those workers that any one of his scientific or inductive inferences is, individually considered, sound. Inductive logic points out to the individual worker how he can pursue methods which in the long run lead the scientific community to success, in so far as this whole community in its more united activities follows these methods. Such methods if followed by the individual investigator accrue to the advantage of his beneficiary, that is to say, of his individually pursued special science. In so far as a given scientific investigator actually works alone, tries his own experiments, tries out his own hypotheses, makes his own inferences, he may act as does a man whose only beneficiary is himself, or who as common sense states the situation, insures himself. In some respects every men insures himself who, as one says, takes his own risks. But while such a lonely worker, like each one of us [assuming] the particular risks of his own private life, can give no valuable interpretation to the probability which he attaches to his own private opinions, unless he at least in ideal regards himself as a member of the community, it still may be said that it is reasonable even for such a lonely worker to pursue the scientific methods which in the long run lead to the progress of the whole scientific community. Such a lonely worker thus can

be sure that he follows a method which in the long run accrues to the value of himself as a scientific worker, who will take interest in the fact that, if he does not succeed, he has done his best to deserve scientific success.

[POSTLUDE]

Some of you who hear this account may ask how this doctrine of Charles Peirce's differs from what William James taught as Pragmatism. I have no time to dwell upon this distinction at any length. I can say at once that in so far as I understand James, his theory of truth was in its essence very highly individualistic. That is, when James taught that propositions are true in so far as they work, he was thinking of workings which come to light in the experience of human individuals. He insisted, indeed, that we all of us count each the experience of other men as of importance in establishing the truth of assertions. That is, from James's point of view, the scientific worker is what one might call simply altruistic. That is, he says my propositions are true for me in so far as experience shows that they work. Your assertions are similarly true for you so far as they work for you. And speaking in general, we can say truth belongs to assertions so far as they work for somebody, are verified in the experience of any individual that you please who is actually [alive][6] and who finds these assertions true.

What James never made explicitly clear about this theory, and what, as I believe, he never saw, was that the workings which are in question, when the community is concerned, have existence in so far only as the community is a reality. James, so far as I understand his philosophy, never formed any definite idea of the community, either ethical, or social, or spiritual. He loved individualism, and appreciated mysticism. Loyalism he, indeed, practically illustrated in much of his most beneficent and generous life. But in doctrine he was never a loyalist. For in James's world, there were no communities which seriously interested him. For whenever James thought of a community, he thought of something having a conventional estimate of truth. And such estimates were repugnant to him.

Charles Peirce, on the other hand, although in his peculiar life he was very much more nomadic than James ever could have been, and although his strange nature condemned him largely to solitude, to spiritual isolation, and to a persistent inability to cooperate with others, was in ideal, and very sincerely, and in his fragmentary writings, very effectively a loyalist. The world of the spirit had from the point of view of his philosophy a very genuine unity about it. As a logician he used to like to express this by saying that he was no nominalist and that the great defect of modern philosophical thought, as well as of modern social life, has been its persistent nominalism, that is, its interest in detached individuals, in their detached success, in their individual failures, and in their mutual impenetrable isolation. What consti-

[6] The word "alive" substituted for a blank in the typescript version.

tuted the tragedy of Peirce's life gave him the warnings upon which his philosophy and his logic are based.

While then he invented the term Pragmatism, his own doctrine was never that of James. It is a scientific community that wins in the advance of science. And despite all vicissitudes of research, this winning of the scientific community is progressive. And on the other hand, the individual worker who draws his own inferences is in the world of scientific investigation what we all are in the fields of our particular lives, a creature of risks, subject to disaster, and unable to define his problems in terms merely of his own feelings of certainty, or in terms merely of his own hopes and fears. What scientific method guarantees to the worker is closely analogous to what loyalty guarantees to the individual doer of everyday deeds – namely, union with the spirit of his community and assurance that, however and wherever he fails, he can follow methods by which the community succeeds, and can therefore insure the advantage of his beneficiary, in case he seriously undertakes to work in the spirit of this community, and in case his beneficiary is also a portion of this community.

Section Two

Evaluations of Royce on Pragmatism

ROYCE'S WORLD AND THE INDIVIDUAL

Charles S. Peirce. "Review of Royce, *The World and the Individual, Second Series*." *The Nation* 75 (31 July 1902): 94–96.

Professor Royce's second and concluding volume discusses questions of intimate interest to everybody. It is more persuasive than the first, of which it enhances the significance. The design of the whole now comes out – to introduce into the Hegelian philosophy of religion such rectifications as must result from recognition of scientific conceptions worked out during the century now completing itself since that philosophy first appeared. Of these new conceptions, some are psychological, some logical; but the chief of them are the new mathematical ideas which cluster about that of an infinite multitude. Mathematicians, perhaps, still linger on the stage, who, in their best days, used to be quite positive that one cannot reason mathematically about infinity, and used to feel, like the old lady about her total depravity, that, this cherished inability being taken away, the bottom would fall out of the calculus. Such notions are obsolete. Various degrees of infinity are to-day conceived with perfect definiteness; and the utter misapprehension of the metaphysicians about it, above all of Hegel, glares. As a first serious attempt to apply to philosophical subjects the exactitude of thought that reigns in the mathematical sciences, and this, not on the part of some obscure recluse whose results do not become known to the public, but on that of an eminent professor in a great university, to whom the world is disposed to listen with attention, Royce's 'The World and the Individual' will stand a prominent milestone upon the highway of philosophy.

Our space will permit only the most salient features of Professor Royce's theory to be roughly sketched. "An Idea is any state of mind that has a conscious meaning." In reference to meaning, logicians have never failed to recognize "quod fere in omnium ore celebre est, aliud scilicet esse quod appellative [*i.e.*, adjectives] *significant*, et aliud esse quod *nominant*. Nominantur sigularia, sed universalia significantur." So John of Salisbury, Abelard's pupil, expresses the distinction. That for the most important signs the signification is intrinsic, the denotation (*quod nominant*) extrinsic, is generally recognized. Professor Royce marks the distinction by the terms Internal Meaning and External Meaning. He conceives of the internal meaning in a special way. Another writer, a quarter of a century ago, proposed this maxim: "Consider what effects that might conceivably have

practical bearings we conceive the object of our conception to have. Then our conception of those effects is the *whole* of our conception of the object." Carrying this pragmatistic spirit a trifle further, Professor Royce holds that the internal meaning of an idea is a Purpose, instead of regarding it, with his predecessor, as a germinal purpose. This purpose – obscurely recognized, since not all to which it will lead is foreseen; partially fulfilled in being recognized, since a purpose strives first of all to understand itself; but mainly unfulfilled, since it would not remain a purpose after fulfilment – is the internal meaning, or signification, or depth, of the idea. The purpose is vague – anything that refers to the future is more or less vague; and a sincere purpose to do a thing "right now" actually does it. The purpose is to do a thing under certain circumstances. Completely to define these circumstances, it would be necessary to give a biography of the purposer from birth, without any omission. The purpose is to do something in order to produce certain results. Completely to define the result accomplished must involve a complete representation of the agent's future life. In short, the complete fulfilment of any purpose, which alone is the external meaning of the idea, is no less than the entire life of the thinker. The reviewer will say, for clearness, that neither these nor the majority of the author's positions have been satisfactorily shown to be true (in the reviewer's opinion, but the author holds them to be perfectly demonstrated). The principal of them may rank as verifiable hypotheses possessed of the plausibility and other qualifications that render them eminently worthy of further examination, even if an engine of rare usefulness must be drawn away from other work for the purpose.

That the object of an idea, then, its external meaning, is of the nature of a sign could hardly be gainsaid. But Professor Royce finds it not only a sign but an idea; not only one idea but a "concrete" idea in the Hegelian sense, and that, not relatively, but perfectly, and so of the nature of life; and not only life, but an entire life. "The Being of the real object of which you now think, means a life that expresses the fulfilment of just your present plan."

But suppose the reader to ask, How can an idea, so microscopic a piece of a life, contain within its implication a distinct feature corresponding to every feature of the entire life of which it is only a part? This difficulty is happily removed by the author in a way which ought to be instructive to those metaphysicians whose horizon is limited by the walls of a theological seminary. He resorts to Gauss's conception of an *Abbild*, which has played a great role in mathematics. That is to say, he likens the idea representing the entire life to a map of a country lying upon the territory of that country. Imagine a map of England, absolutely perfect in its minutest details, to lie upon the soil of England, without covering the entire country it maps. Upon this map would be shown the very ground where the map lies, and the map itself, in all its minutest details. In this map of the map, the map will be shown again; and so on endlessly. Here, then, will be a part fully representing its

whole, just as the implicit meaning of the idea is supposed to represent the entire life. It is to be noticed that, each successive map lying well inside the one which it immediately represents, unless there be a hole in the country which a ringshaped map encloses, the endless series of maps will converge to a single point, which represents itself throughout each and every map of the series. In the case of the idea, that point would be the self-consciousness of the idea. An idea, being a state of mind with a conscious purpose, must evidently be self-conscious.

There, then, would seem to be a beautiful and a needed (though not a complete) confirmation of the aptness of the metaphor. Yet here the author recoils, and refuses to admit the continuity, or even the analytic continuity, of the map. He insists that no representation represents itself; a hard saying, which exact logic appears directly to refute. "The world of Self," he says, "whatever continuity of internal structure it may, in some aspects, possess, is, in its principal form of expression, embodied in a discrete series of ... individual expression.... Experience at any moment shows how I am conscious of my ... approaches to selfhood in any way in the form of a discrete series in which one stage ... is followed by the next." The argument which supports this assertion is not assented to upon all hands. If it be true, there are but two alternatives: either, notwithstanding this, in the respects in which an idea represents an entire life there is continuity, or, at least, a higher infinity than that of the simple endless series; or else the doctrine that to an idea a reality must in some shape correspond must fall to the ground.

According to Professor Royce, an idea fails of being a Self only because it is general and not perfectly determined; which the reader may deem a dark saying unless the sword of Hegel is invoked to cut the knot. Its implicit or germinal inward meaning would, then, be a little Self, representing the entire life as its external meaning. In a similar way, the Self of the man is perhaps included within a larger Self of the community. On the other hand, the man's Self encloses intermediate selves – the domestic Self, the business Self, the better Self, the evil spirit that sometimes usurps his sovereignty. Of course, the system of delineation for the larger and for the enclosed selves will be different. Here the author draws support from the psychological doctrine of what he calls the "time-span," a doctrine which, so far as it has really been placed beyond important doubt, amounts to little more than that our image of the events of the few seconds last past is, or is very like, a direct perception, while our representation of what happened a minute or so ago is relatively of a far more mediate character. This phenomenon had already been seized upon by several idealistic writers as affording a refutation of dualism; but there is no better way of appreciating the large calibre of Royce's thought than by comparing their styles of putting this idea to the service of metaphysics with his. He imagines that the greater selves will naturally have vastly longer time-spans than the lesser selves. Now a consciousness whose time-span, or

"specious present," or "empirical present," as it is variously called, was a thousandth of a second or a thousand years would not ordinarily be recognized as a consciousness at all by a human observer of its external manifestations. The time-span of the All-enclosing Self must cover all time; and this gives a sort of support to the imagination if we wish to reconcile foreknowledge and free will after the manner of Boëthius, St. Augustine, and others.

Every reality, then, is a Self, and the selves are intimately connected, as if they formed a continuum. Each one is, so to say, a delineation; with mathematical truth we may say, incongruous though the metaphor is, that each is a quasi-map of the entire field of all the selves, which organic aggregate is itself a Self, the Absolute Idea of Hegel. So far as a philosophical conception can be identified with God it is God.

All reasoning goes upon the assumption that there is a true answer to whatever question may be under discussion, which answer cannot be rendered false by anything that the disputants may say or think about it; and further, that the denial of that true answer is false. This makes an apparent difficulty for idealism. For if all reality is of the nature of an actual idea, there seems to be no room for possibility or any lower mode than actuality, among the categories of being. (Hegel includes modality only in his Subjective Logic.) But what, then, can be the mode of being of a representation or meaning unequivocally false? For Hegel, the false is the bad, that which is out of harmony with its own essence; and since, in his view, contradiction is the great form of activity of the world, he has no difficulty in admitting that an idea may be out of harmony with itself. Prof. Royce, however, seems almost to resent the idea that anybody could suppose that he denied the validity of the distinction of truth and falsehood. He is fairly outspoken in pronouncing sundry doctrines false (a word Hegel hardly uses), even if we do not quite hear his foot come down; and nothing does he hold more false than the usual form of stating the distinction now in question, namely, that a true proposition corresponds to a *real matter of fact*, by which is meant a state of things, definite and individual, which *does not consist merely in being represented (in any particular representation) to be as it is*. For example, if I dream that I find I can float in the air, this matter of dream is not matter of fact, for the reason that the only sense in which I can float in the air is that so my dream represented the matter. Now Prof. Royce offers to demonstrate by necessary reasoning that the statement – or, as he expresses it, that "to be real means to be independent of ideas which relate to that being" – is false. His argument to this effect will serve as a sufficiently characteristic, but rather favorable sample of his general style of argumentation.

Having given us to understand that he is going to disprove the proposition, he opens his argumentation by declaring that he does not know what the proposition means. Thereupon, he proceeds to propound a general maxim of procedure for all cases in which one has to refute a proposition without

knowing what it means. It is to begin by assigning to it its "most extreme form." This certainly does not signify the most extremely defensible meaning, but rather the most extremely indefensible meaning that the language will bear. The proposition having been refuted in this extreme sense, it will only be necessary afterwards to argue that other interpretations make no essential difference. This maxim, one would suppose, would prove very serviceable to anybody who should have any large amount of that sort of refutation to perform. In accordance with this maxim, Prof. Royce begins by assuming that realists hold that no idea in the slightest degree determines the real object of it, whether causally or in any other manner. Whether this does not overstep the limits of admissible interpretation, seeing that a realist who meant this would deny that any promise can really be kept, or that any purpose can influence the real result, the reader must say. At any rate, it would not seem to be a difficult position to refute.

Now in order that he may get the realist where he wants him, there are two acknowledgments which Professor Royce endeavors to extort from him. To bring him to the first, the author assumes the principle that all causal action is reciprocal, or of the nature of reaction. This is evidently contrary to popular opinion, which holds that while the past has exerted some efficient causality upon the future, the future cannot have any *effect*, in the strict sense of that word, upon the past; and that while the future may have influenced the past by final, or ideal, causation, the past cannot possibly influence the future as the aim of the future. The reader may judge whether a realist of so extreme a type as that which Professor Royce has set up would or would not admit that the real object of an idea cannot have influenced the idea, in the absence of any attempt on the part of Professor Royce to prove his general principle of reciprocity. If he would not, old-fashioned logic (which Hegelians, it is true, hold in high contempt) would pronounce the attempted demonstration to be a bald *petitio principii*.

In order to extract the second acknowledgment from the realist, Professor Royce produces an argument which would seem to have as much force for one kind of realist as for another. He supposes two objects, B and R, to be related to one another as the realist supposes the Being, or the real object of an idea, and the Representation, in the form of an idea of that object, to be related; and he undertakes to define the relation between them. "The definition in question," he says, "is, as a mere abstract statement, easy." One would think so. The realist simply says that B is not constituted by its being represented in R; that is, he says that the fact that B is as it is, would be logically consistent with R's representing it to be otherwise. But in place of this easily comprehensible relation, what fantastic attempt do we find at the definition that was pronounced to be so easy! Professor Royce will have it that the realist holds that the relation is such that no matter how R may be metamorphosed, it is logically possible for B to remain unchanged. In such a sense, what two

things in the world are independent? Change the problematic madness of Hamlet into the pacification of the Philippines, and it will become logically inconsistent with the continuance of great disturbances there. But change the doubtful *representation* by Shakspere that the fictitious Hamlet was unhinged into the *representation* that the Philippines were pacificated in 1901, and it will not have the slightest logical consequence for the real state of things. The truth is, that Professor Royce is blind to a fact which all ordinary people will see plainly enough; that the essence of the realist's opinion is that it is one thing to *be* and another thing to *be represented*; and the cause of this cecity is that the Professor is completely immersed in his absolute idealism, which precisely consists in denying that distinction. It is his element, and there is total reflection at its surface. That, however, is what Professor Royce asks the realist to admit as a premise. The conclusion which he deduces from it is that if B is linked as cause to any determination of R, there must be a *tertium quid* by the mediation of which the causation takes place. Now the premise is absurd; and the formal rule is that from an absurd premise every conclusion must be allowed to be logical; that is to say, it is needless to dispute its logicality, the premise being false. The argument, therefore, cannot be called formally bad; nor can we object that a few lines below, in a restatement of the conclusion, B's being linked as cause gets changed into B's having any causal *or other* linkage.

Professor Royce, armed with his wrong definition of realism, goes on to a dilemma to show that, whether the realist says that real things are one or are many, he equally involves himself in contradiction. But, although the characteristics of his style of argumentation become even more prominent in that dilemma, the exigencies of space forbid our following him further. But we should like to say one word to this powerful and accurate thinker who has been so completely led astray in his argumentation by his Hegelian logic: Absolute idealism depends, as Hegel saw that it did, upon assuming that position at the outset. If your refutation of realism is addressed to students who are already absolute idealists at heart, we will not undertake to say whether it will be serviceable for the development of that doctrine, or not. But if it is addressed to realists themselves, it must conform to the logical principles recognized by realists, or be nugatory. Now you know very well that realists do not admit that matter of fact can be apodeictically demonstrated. You ought to know, and surely you do know, that if you drive them into a corner, they will simply modify their admissions so far as may be necessary to avoid self-contradiction, and that from the very nature of apodeictic proof it is absolutely impossible to close off such escape in arguing about matter of fact. The history of the doctrine of parallels illustrates what logic shows to be necessarily the state of the case. But the question of realism is a question of hard fact, if ever there was a hard fact; and therefore your method must be revolutionized if you are ever to convince any master of logic.

A REPLY TO PROFESSOR ROYCE'S CRITIQUE OF INSTRUMENTALISM

John Dewey. "A Reply to Professor Royce's Critique of Instrumentalism." *Philosophical Review* 21.1 (January 1912): 69–81.

The republication by Professor Royce of his important address at the International Congress of Philosophy at Heidelberg, upon the Problem of Truth,[1] will set many persons to reviewing the problem, and some, perhaps, to considering it for the first time. Its criticisms of the instrumentalist position are so searching and its statements of that position so eminently fair – that is to say, intelligent – that, as one of those expounded and criticized, I should feel at once professionally stupid and personally unappreciative if I made no effort at response. I shall not attempt, however, to traverse the entire field but shall, in the main, confine myself to one point which Professor Royce has made peculiarly his own: The indispensableness to the instrumentalist theories of truth, even as working empirical theories, of a recognition of the social implications of ideas and beliefs. This indispensableness appears, to Professor Royce, fatal to the instrumental conception; to me it seems its essence.

In gist, Mr. Royce contends that if one admits the instrumental conception to be sound "as far as it goes," one is thereby bound to go a good deal farther – all the way to absolutism. Or, in his own words:

> Instrumentalism, consequently, expresses no motive which by itself alone is adequate to constitute any theory of truth. And yet, as I have pointed out, I doubt not that instrumentalism gives such a substantially true account of man's natural functions as a truth seeker. Only the sense in which instrumentalism is a true account of human life is opposed to the adequacy of its own definition of truth.[2]

There is a sense in which – so Professor Royce repeatedly states – instrumentalism is (or better, "contains") a correct "report of the truth about our actual human life, and about the sense in which we all seek and test and strive

[1] *William James, and Other Essays*, Essay IV. New York, 1911.

[2] P. 222 [this volume, p. ??].

for truth, precisely in so far as truth-seeking is indeed a part of our present organic activities."[3]

It is obvious (is it not?) that when a criticism is made from the standpoint of the acceptance of a certain conception, and when the critical procedure tries to show that acceptance in logical good faith is quite incompatible with the version of the conception bruited abroad by those most actively engaged in circulating it, it is then obvious, I say, that everything depends upon *what* meaning is attributed to the conception that one accepts, upon *how* one conceives the conception that he announces himself as accepting. *If* the conception of instrumentalism that is "accepted" is after all one's own conception rather than that of those who hold the definition of truth in question, what one has demonstrated at the end is that one's *own* conception of instrumentalism is logically compatible only with absolutism – a conclusion not entirely surprising at the hands of such an accomplished dialectician as Professor Royce.

My first task, accordingly, is a churlish one. I have to show that the logical success of Professor Royce consists in attributing to the instrumentalist certain ideas which are indeed Mr. Royce's own presuppositions, but which are quite foreign – in fact and in logic – to the instrumentalist's position. In short, Professor Royce has not, after all, adequately "accepted" the instrumentalist account even as an empirical account of truth-seeking and truth-testing, for in accepting it he has read into it things so obvious, so self-evident to him that it has not occurred to him that the instrumentalist makes his way, for better or worse, precisely and only because he has rejected and eliminated them. I call this task churlish. And so it is. When one considers how often the pragmatist and instrumentalist have been refuted by denying to them any vestige of sense, to say nothing of truth, how often they have been refuted by attributing to them wilful perversity of facts evident to any sane apprehension, it would be a grateful task to acknowledge the sympathetic and just version – *in every point save one only* – of instrumentalism rendered by Professor Royce. But alas for one's natural piety; for present purposes it is just this one point that enters into the reckoning.

I

Let me quote at length a statement which an instrumentalist at once recognizes to be a sympathetic and just (if not complete) version of his own intention.

[3] P. 218 [this volume, p. ??].

> Human opinions, judgments, ideas, are part of the effort of a live creature to adapt himself to his natural world. Ideas and beliefs are, in a word, organic functions. And truth ... is a certain value belonging to such ideas.[4] But this value itself is simply like the value which any natural organic function possesses. Ideas and opinions are instruments whose use lies in the fact that, if they are the right ones, they preserve life and render life stable. Their existence is due to the same natural causes that are represented in our whole organic evolution. Accordingly, assertions or ideas are true in proportion as they accomplish this biological and psychological function. This value of truth is itself a biological and psychological value. The true ideas are the ones which adapt us for life as human beings.[5]

Alas, for that little – or big – word "psychological." How great, indeed, are the oaks that little acorns start; what a cataract the little crack in the dam finally lets through – and like samples of proverbial philosophy! Surely the unprejudiced reader would infer from the above statement that, though the term psychological is undefined, the criterion for its definition lies in the conceptions of "life," of "organic functions," of "adaptation to [better *in*] a natural world." And the inference would correctly represent the point of view of the instrumentalist. But, as Professor Royce proceeds, "psychological" is employed to designate the merely private, the merely personal, and, at times, even the internal, transient "states of consciousness." Then the "psychological" swells and swells, till it swallows up the "live creature," the "natural world" and "biological functions." And if the instrumentalist wants them back (and he must get them back if he is to carry on his business) he must go to the Absolute to take out a license.

The instrumentalist

> account of human organic and psychological functions may be – yes, is – as far as it goes true. But if it is true at all, then it is true as an account of the characters actually common to the experience of a vast number of men. It is true, if at all, as a report of the objective totality of facts which we call human experience. It is true, then, in a sense which no man can

[4] The omitted words are, "in so far as we men can recognize truth at all." The phrase thrown into an exposition made professedly from the standpoint of the instrumentalist is significant. Even Mr. Royce cannot wholly free himself from the notion that instrumentalism's account of truth is a statement of what truth is "for us" as distinct from some absolute truth or truth for itself. Of course, from its own standpoint, it is a statement about truth, about the sole intelligible meaning of the term truth.

[5] P. 193–194 [this volume, p. ??].

> ever test by the empirical success of his own ideas as his means of controlling his own experiences.... If instrumentalism is true, it is true as a report of facts about the general course of history, of evolution, and of human experience – facts which transcend every individual man's experience, verifications and successes.[6]

The logic of this passage gives a narrow and exclusive sense to "individual man's experience," "his own ideas, his own experiences," a sense so narrow and exclusive as to throw between personal experience and "objective human experience" or the historic experience of the race, a gulf so deep and wide that only the Absolute *ex machina* will bridge it and bring the objective human experience and the individual's experience together.

The contrast is explicit in such a passage as the following:

> For no man experiences the success of any man but himself, or of any instruments but his own; and the truth, say, of Newton's theory consists, by hypothesis, in the perfectly objective fact that generations of men have really succeeded in guiding their experience by this theory. But that this is a fact no man, as an individual man, ever has experienced or will experience under human conditions.[7]

Here we have the logic exposed. Men are individuals; therefore whatever is experienced is one's own individual experience; or, individuals experience only themselves, and their exclusive possessions, which are, in fact, parts of themselves. The ground I plow is my own ground; I plow it with my own instrument, my own plow; the harvest – the success – is my own. Therefore the ground was never anybody else's; it is impossible for me even to see from it any other person's land (unless I secure a transcendental telescope); it is impossible for my plow to plow other persons' land; and the harvest, being mine, must be mine only, and therefore unsharable by others.

To my mind there is just one interesting question about such a view as this of the "individual" and of "his own" – the historic question. What ever led intelligent human beings to such a conception of human individuality and of its acts and states? What led to the identification of the individual with the private, and of the private with the merely private, with the absolutely exclusive and isolated? We are not now concerned however with a question of fact, but with a question of logic. Only as he assumes that the instrumentalist does and must presuppose this monopolistic, all-swallowing octopus of

[6] Pp. 221–222 [this volume, p. ??].

[7] Pp. 220–221 [this volume, p. ??]. Yet Professor Royce, an individual man, knows this objective fact!

an individual and "his own," does Professor Royce "accept" the instrumentalist account, and argue to its necessary implication of the Absolute. Speaking for myself, I may say that if I had any such nihilistic, anarchistically egoistic notion of the individual man, of his doings, states, tools and results, I should probably be willing to resort to an absolute to escape my "own" awful isolation and selfishness. For selfishness is agreeable only when it involves others. But even so, such atrophied logical sense as may be supposed to survive even in an instrumentalist would haunt me with a suspicion that this Absolute was but another of my purely personal belongings, the most precious of my private possessions in appearance, and, in fact, a huge joke that some peculiarly private part of my private being was working off on my more accessible private properties. For, to consider the matter logically, it is passing strange that the private nature of my experience makes it impossible for me to be aware of such a prosaically limited matter as the existence of Sir Isaac Newton while it absolutely warrants the absolute truth of my belief in something which includes Sir Isaac Newton along with everything else past, present and future. Surely the proverb concerning straining at a gnat and swallowing a camel should be brought down to date.

But we are getting too far away from the instrumentalist's position as he himself "accepts" or conceives it. Let us try, with a more unbiased sympathy, to take that point of view from which "human opinions, judgments, ideas, *are part of the effort of a live creature to adapt himself to his natural world*," where beliefs are organic functions, and experiences are organic adaptations involving such functions; and where the issue – the success or failure – of these adaptations constitutes the *value* of the beliefs in question. Is there any conceivable way in which a person who had adopted (with however moderate an understanding of what he was about) such a position could still hold that the natural world was merely his own idea; that a live creature was just one of his own private entertainments or conceits, and that organic functions in their tools and results were confined to his own insides?

It is not necessary to enter into a definition of "psychological" upon the basis of the instrumental conception. But it must be conceived in accordance with the fundamental position of the live creature adapting itself to a natural world. And one of the most rudimentary traits of a live creature is its continuity with a racial organic life, just as that of an environment is its spatial diversity and its temporal perdurance. Without these features, adaptation and organic function are the most empty sort of term. Follow out the implications of *such* conceptions instead of the conception which Mr. Royce holds (and with great and fatal generosity lends to the instrumentalist) and the gulf between the objective human experience and the supposedly purely subjective individual experience disappears. Life individuates itself, and particular individuations appear and disappear. But the individuation is a trait of life; it is not the mystery of a private, isolated somewhat which destroys all the

natural traits of life to replace them with its own quite opposite traits. We are not to interpret "life" in accord with some psychological preconception of the merely personal; we are to interpret the personal in accord with the functions of life. A particular passage may serve to bring out the difference of conception. After stating what the truth of the Newtonian conception would consist in from the instrumental point of view, Professor Royce goes on to ask about the sense in which the statement of the historic episode of the formation and success of Newton's theory is itself true. Unless the instrumentalist is quite stupid, he will, I take it, apply his own criterion. It is true by the same token; it enables predictions, it gives control, it facilitates intercourse, it clears the path of obscurities, it guides (instead of obstructing) new observations and reflections, it brings men together instead of dividing them – so far as it is acted upon and thus genuinely asserted. But this path seems to Professor Royce to be quite closed to the instrumentalist.

> Newton is dead. As mortal man he succeeds no longer. His ideas, as psychological functions, died with him. His earthly experiences ceased when death shut his eyes. Wherein consists to-day, then, the historical truth that Newton ever existed at all, or that the countless other men whom his theories are said to have guided ever lived, or experienced, or succeeded?

Such statements followed by such a question are well calculated to inspire one with a feeling of despair regarding the possibility of arriving at any philosophic understanding. Newton is dead; therefore how can I assert as truth that he ever lived? The obvious answer is so obvious and so easy that it cannot be relevant to what Mr. Royce has in mind: the answer, namely, that Newton cannot be dead unless he once lived, and that, organic life being what it is, if he lived in the seventeenth century, he is surely dead by this time. I cannot imagine any beliefs operating and succeeding as organic functions in the development of life unless such simple and ordinary beliefs as these are capable of working, and working with a reasonable degree of success. If the propositions were that Newton is dead, though he never lived; or that because he was living in the seventeenth century, he must be living now, I can see how the propositions would offer difficulties to a pragmatic theory; I confess I do not see how they could "work." Seriously, and not in levity, this seems to me the inevitable answer and the only answer that instrumental theory can make to the question just cited.

But equally I have no doubt this reply is quite irrelevant to what Professor Royce had in mind. And, accordingly, I shall have to make a guess as to what presuppositions underlie the question and address a reply also to them. There are a number of phrases in the discussion which lead me to infer that Professor Royce identifies truth with existence. Now if the truth about Sir Isaac Newton's existence is the same thing as that existence itself, it is quite sure

that no possible present experience will yield truth. For the working in experience of a belief or conception for its control, guidance, clarification, for social intimacy and emancipation, will not operate to raise Sir Isaac Newton *in propria persona* from the grave; it will not in short constitute (or reconstitute) his *existence*. But instrumentalism never pretended to encroach on the idealistic privilege of creating natural existences by formulating truths about them. It is content with the humbler task of describing how men do as matter of fact recreate, transform, *some* natural existence by intellectual formulations about *some other* existence. (The successful transformation of some things by use of intellectual formulations about other things being what instrumentalism calls the truth of these formulations.)

I know of no *a priori* compulsion to formulate conceptions or beliefs regarding Sir Isaac Newton; it is a safe guess for instance, that many an Oriental potentate has gone to his grave about whom no belief will ever be entertained, just as the vast majority of natural happenings go by without being reflected upon. But when there is a specific need for thinking, and a specific hypothesis emerges in response to the need, it is needful that we should have some way of testing its value, of developing it to the point of being true or false. And acting upon the hypothesis to select and collate data, to predict, to guide new observations and reflections, to organize the seemingly discrepant and to illuminate the hitherto obscure is the way. The success of the hypothesis upon and along this way is its truth.

If, however, the death of Sir Isaac Newton, and the cessation of his experiences, carried with them the absolute interruption of organic life, of all experience, if his experience, in other words, operated in absolute discontinuity in matter and method from mine and mine from yours, I can well see that the instrumentalist would be put to it to frame any idea about Newton, to say nothing of verifying it. But the difficulty would not be confined to the instrumentalist. Even the absolutist would, in such a situation, be unhelped by the Absolute. And if instrumentalist and absolutist alike do make judgments about Newton and, within certain degrees of approximation, arrive at successful outcomes, it is because life, experience, has its own continuities and sociable relationships.

And this brings me to my second guess about the difficulty which Professor Royce feels his question to involve. He presupposes, again, the completely egoistic, exclusive nature of Newton's experience – his life, his acts – on one side, and of mine on the other. "His ideas, as psychological functions, died with him." But did they? And if they did, what are we going to do about it, even with the help of the conception of the Absolute? For so far as they "died with him," the problem is not that of some eventual verification of our ideas about his ideas, but of our having any idea about his ideas.

In short, we come again to our basic statements: one about the instrumentalist, the other about Professor Royce's position. (a) By calling Newton's

idea, his theory, a *function*, instrumentalism means to emphasize precisely that it *was* a function – to insist upon the need of reinterpreting the adjective "psychological" from the standpoint of function – an organizing and organized act, public, objective, impersonal just as surely as private, individual, personal. Certain images, a certain emotional tone of inward landscape, may be said to have "died" when Newton died. But to say that his idea of gravitation, as a vital *function*, died with him is to traverse the facts. Newton acted through it, lived it out, so adequately, that it became an integral part of the activities of educated men and scientific inquirers throughout the civilized world. Since this transmissive operation is just one of the things that is included in the conception of "success" of a vital function, one is not accepting the standpoint of instrumentalism when one conceives the vital function as something which renders impossible this transmissive operation. That the idea was made true means precisely that as a *function* it did not die.

(b) As to the logic of Professor Royce's own conception. Professor Royce says of certain statements about Newton: "No doubt all these historical and socially significant statements of mine are indeed substantially true" (p. 219 [this volume, p. ??]). Professor Royce would doubtless also hold that there is a countless multitude of doings and sufferings of Newton about which we cannot now make any intelligible statements. So far as the "substantially true statements" are concerned, does not Professor Royce (and everybody else) fall back upon the procedure of which instrumentalism is simply a generalized description? And as far as the other to us non-existent "truths"[8] are concerned, does the conception (or the Being) of the Absolute help us one bit? Upon the Absolutist theory, what explanation can account for this partiality on the part of the Absolute? Why has it rendered certain events so opaque and silent and others so transparent and communicative? Is there any explanation that does not take us back to the instrumentalist terms – terms of vital doing under conditions of natural and social need, adaptation and success?

And so far as our belief in the existence of the Absolute is concerned, why should we adopt a different logical procedure from that which has brought us to believe certain things about Newton? If the continuities, the transmissive bearings of life, of experience, suffice in the case of Newton to enable certain intellectual formulations – reflections – to prosper while dooming others to defeat, why, if the Absolute exists, should we not, *a fortiori*, wait till conditions have made the conception of its existence one that works out under tests? And, lacking these instrumental tests, what right have we to assert the truth of what, by Mr. Royce's own hypothesis, is a purely private, personal idea?[9]

[8] Not "truths," but events, on any except a preordained idealistic basis.

[9] "Instrumentalism in so far correctly defines the nature which truth possesses *in so far as we ever actually verify truth*," p. 224 [this volume, p. ??] (italics mine).

II

As respects certain truths, some instrumentalists – Professor James particularly – have made much of the significance of vicarious social verification. In Mr. Royce's words:

> Since we are social beings, and beings with countless and varied needs, we constantly define and accept as valid very numerous ideas and opinions whose truth we do not hope personally to verify.... If we personally do not verify a given idea, we can still accept it then upon its credit value. We can accept it precisely as paper, which cannot now be cashed, is accepted by one who regards that paper as, for a given purpose, or to a given extent equivalent to cash.[10]

This procedure Professor Royce accepts as an actual procedure, while he holds that reliance upon it is inconsistent with the instrumental conception of truth, – that, consistently, instrumentalism must identify the act of giving credit with truth itself, that is to say, anything is true to which we find it expedient to give credence at a given moment. Mr. Royce disclaims being an intellectualist of the rationalistic type, but he employs the good old rationalistic device of rigid alternatives. Either the assertion which I accept on credit *is* already true (truth belongs to the assertion anyway) or else by its truth I mean simply that I give credit to it. The former alternative surrenders instrumentalism; the latter puts it in the position of making truths offhand, while you wait – the sanctioning of caprice, whim, etc.

For reasons which I hope will appear presently, I am particularly interested in the implications of the "credit" notion with respect to its content. Before dealing with this phase of the matter, it seems necessary, however, to devote space to the formal dilemma. Upon close inspection it will be found, I think, to resemble most cases of formal alternatives in philosophic discussion. Two extremes are set up as exhaustive, while as matter of fact multitudes of other alternatives glide freely through wide-open intervening meshes. What *should* it mean upon the instrumental theory to accept some view or idea as true upon social credit? Clearly that such an acceptance itself works. And if the environment, the medium of action, be social could any other method save that of accrediting the results of experience in others be expected to work? There is nothing so licentious about the matter as Professor Royce's abstract logic would make out; the acceptance upon credit is subject to precisely the same sort of tests – of working under conditions – as acceptance on the basis of more direct personal verifications. What is indicated is that the social medium of life is as continuous as we have seen life itself to be. One has

[10] Pp. 224–225 [this volume, p. ??].

verified in innumerable cases that under certain conditions one can trust to the experience and the reports of others; one has found out that the limits between one's own experience and that of another are quite arbitrary and elusive. Besides this general verificational background, there is the specific verification, through working, of *acceptance* of this particular belief upon the credit and authority of some particular group of persons. And besides, there is frequent verification through the experiences of others who have given credit to these assertions – a method which could be made to appear vicious by the logic of abstractionism, but which, in inductive logic, is independently cumulative and hence confirming. In short, one doesn't, as an instrumentalist, accept arbitrarily on credit; he accepts on probation, hypothetically, just as one accepts his own hypotheses when they first occur to him. As this acceptance is confirmed by his works, the acceptance becomes a genuine accrediting; it has received the kind of trying by experimental tests in life that the conditions permit. That this is the way in which sensible men proceed can be shown by an argument *ad hominem*, indicating that even an absolutist must *actually* so proceed. Let us admit with Professor Royce that to the assertion in question truth or falsity already inherently belongs. Now, being unable to verify the matter directly, what shall be my attitude? I cannot, by hypothesis (Professor Royce's own hypothesis), be sure whether it is true or false, although I am sure it is already either one or the other. According to Professor Royce the only recourse possible is to accept or reject, just arbitrarily, by whim, by what seems agreeable at the moment. In short, the dilemma is one which applies only to those who hold Mr. Royce's view, and for them it takes the form of a choice of the two alternatives: Complete scepticism as to what is the truth or falsity of most things in history and nature, or else the loosest go-as-you-please most wayward opinionatedness. Other people employ the cautious testing of the kind and amount of credit to be given to others' ideas and reports that is described in the instrumentalist account.

As I have already stated, I find my significant interest attaching to the conception of social credit, and to the implied analogy of belief with credit in business, for this suggests that my *personal* experience is itself social in origin, matter and outlook. In good business, it is intimated, there is some value behind the *credit*; namely, in the philosophic analogy, truth. In purely speculative business, on the contrary, there is nothing but credit behind the credit: the instrumental theory of truth in the philosophic analogy. Now that business, modern business, is done so largely on credit seems to me a significant fact, and one which is peculiarly important for the instrumental theory. For so far as modern business proceeds upon a credit basis, it does *not* rely upon equating credits to values preexisting; modern manufacturing and commerce would go into wholesale bankruptcy were such its basis. It proceeds upon the basis of the *potentialities* of what already exists, upon the *future* operation of industry, good faith and consumption to realize these poten-

tialities. Only in times of panic is there a falling back upon the past, upon the already existent store. And the immediate effect of the insistence upon backing *from behind* of already extant values is to restrict business. There must, indeed, be something behind – fields, woods, mines, human labor, human intercourse, mutual trust, desires, etc. But the credit is not measured by them – not by them just as back there, behind. It is measured by an anticipated future use of them. It is not a matter of their being there in a finished state; it is a matter of their expected consequences, when something is done to them and with them. Credit operates for the more effective and varied use of what is there; not to reduplicate it in some parallel series. And it is the outcome, the actual consequence, that confirms or condemns any particular giving of credit.

I have no wish to base conclusions or theories on a possible analogy. I do wish, however, to secure its full suggestive force. Credit exhibits a possible future outcome operating as present factor to guide and enrich the conditions whose possibilities it relies upon. So does intelligence. Both involve a risk, an uncertain speculative element; both involve, therefore, the need of check and test, of responsibility to the achievement of ends, the production of consequences. Both involve something "behind" them, prior existences; but neither of them is a reiteration or reinstatement of the prior; both are concerned with the potentialities of things, and take effect in endeavor to make potentialities real. And as credit is distinctly a social phenomenon, so is the accrediting which marks the life of thought. Social verification is not, taken by and large, a *pis aller*, in default of "personal" verification. It, and it alone, is verification; personal verification is but a step on this social road – an encouragement, an authorization to go ahead. Experience, life – just as is that phase of experience called business – is social, and it exhibits this sociability nowhere more than in the continuity, the interpenetration, the reciprocal reinforcement of meanings and beliefs. Instead of an Absolute being required to substantiate this social phase of the life of intelligence it is much more probable that the Absolute is a somewhat barren and dry isolation and hypostatizing of the everyday sociality of experience. The accrediting of others' experience is the fact that our personal experience is so much other and more than the narrow personal private matter upon whose "acceptance" Mr. Royce founds his dilemma.

If then, I were to try to gather together the significant strands of instrumentalism in opposition to Professor Royce's welcome of it as a convenient road to absolutism, I should say that as method for philosophy it indicated a more severe intellectual conscience; less free and easy use of the concept of Truth in general and more careful use of truths in particular to designate such conceptions and propositions as have emerged successfully from the test conditions that are practically appropriate. In substance, as distinct from form or method, I should say it meant recognition of intelligence as the way in

which future possible consequences became effective in the present – the recognition of real time and real potentiality – and a recognition of the utterly false character of the prevailing notion of the sheer privacy, the egotistic isolation, of experience, of conscious life. The case is immensely understated when we restrict ourselves to the possibility of pragmatic verification of acceptance of beliefs on credit from others – adequate as is the noting of this possibility for the purpose of securing exemption from Professor Royce's dilemma. The fact is that the life, the experience (including the organic acts of ideas, opinions, judgments, etc.) of "individual man" is already saturated, thoroughly interpenetrated, with social inheritances and references. Education, language and other means of communication are infinitely more important categories of knowledge than any of those exploited by absolutists. And as soon as the methodological battle of instrumentalism is won – as it will be, not by instrumentalists, but by the constantly increasing influence of scientific method upon the imagination of the philosopher – the two services that will stand to the credit of instrumentalism will be calling attention first, to the connection of intelligence with a genuine future, and, second, to the social constitution of personal, even of private, experience, above all of any experience that has assumed the knowledge-form.

THE PROBLEM OF KNOWLEDGE

Douglas C. Macintosh. "Royce and Boodin." Selection from *The Problem of Knowledge* (New York: Macmillan, 1915), chap. 17, pp. 384–390, 395–396.

We shall have to examine the views of one more representative of idealistic absolute intellectualism, viz. Josiah Royce; for, in spite of his "absolute pragmatism,"[1] this philosopher's theory of truth remains, as we will endeavor to show, essentially intellectualistic rather than pragmatic. Royce makes many concessions to the pragmatist, although, as we shall see, they all fall short of essential pragmatism. He admits that every judgment is a reaction at a particular time to an empirically given situation, a reaction expressing, and determined by, the consciousness of a need to get control over the situation. He also admits that even the most remote speculations are, for the man who engages in them, modes of conduct, and that the thinker's ideas are his own deeds, or at least his plans of action.[2] But while maintaining that every opinion is a deed, intended to guide other deeds, and consequently that all truth is practical,[3] he does not propose to take this practical characteristic of truth as furnishing, under any conditions, a criterion of truth; he adopts a criterion and definition of truth which are, as will appear, quite non-pragmatic.

But even more important for the understanding of Royce's theory of truth than his relations to pragmatism is his rejection of realism. His fallacious arguments for a non-realistic system we have already examined, but his criticism of realism is almost equally open to objection. Even in his first published volume, on the ground that, as he alleges, common sense does not know what error is, he says, "Let common sense not disturb us, then, in our further search."[4] Against this summary procedure it is sufficient to remark that if common sense, *without the pragmatic criterion*, is unable to say what error is, it does not follow that common sense, *with* the pragmatic criterion, might not be able to furnish the desired solution. Moreover, in his treatment

[1] "The Problem of Truth in the Light of Recent Discussion," *William James and Other Essays*, p. 254 [this volume, p. ??].

[2] "The Eternal and the Practical," *Philosophical Review*, XIII, 1904, pp. 117–119, 141 [this volume, p. ??]; cf. *William James and Other Essays*, pp. 223, 233 [this volume, p. ??].

[3] *Sources of Religious Insight*, pp. 145–146 [this volume, p. ??].

[4] *The Religious Aspect of Philosophy*, p. 392.

of realism, Royce commits the fallacy of assuming that the refutation of a particular type of realism – and that a very extreme and indefensible kind – is a sufficient refutation of all realism. He assumes that realism must be absolutely dualistic in epistemology, completely sundering the *what* from the *that*,[5] and even supposing that what one mentally constructs and discovers as thus constructed, existed prior to that construction.[6] He also assumes that "independently real" must mean not only real independently of the knowledge relation, but real independently of *all* relations, a pluralism so absolute as to deny that there obtain among real things any relations except such as are so absolutely external that they are not *relations* at all.[7] It is small wonder, then, that a seeming triumph for idealism is easily obtained.

Having thus, as he supposes, shown the impossibility of a rational defense of realism, the need of finding some way of reaching objectivity becomes imperative. We need to hold that the subject of our judgments is Reality, not our idea,[8] and we need that the judgments which we need for practical purposes be also true of this reality which is not our idea.[9] What Royce proposes in this situation, as a substitute for realism, is to fall back upon what is given subjectively, viz, our needs;[10] and it is this private need of his own, as a non-realistic philosopher, this need of constructing objectivity out of our subjective needs, or of finding it in them, that explains his seemingly rather patronizing attitude toward contemporary pragmatism, with its emphasis upon the theoretical value of practical considerations. What we need in needing truth is, at the very least, according to Royce, companionship in our thinking,[11] but it is more than merely this.[12] The need of the moment needs to be controlled, not, as the realist imagines, by an independently existing object, but by "some universal expression of need – an expression that simply makes conscious what the need of the moment is trying, after all, to be."[13] Our need of truth is a need of an insight such as would remain invariant for every additional point of view;[14] and this, it is assumed, can only mean one's

[5] *The World and the Individual*, Vol. I, p. 107.

[6] *Philosophical Review*, XIII, 1904, p. 125 [this volume, p. ??].

[7] *The World and the Individual*, Vol. I, pp. 112, 127–136.

[8] *Ibid.*, pp. 95, 271–272.

[9] *Philosophical Review*, XIII, 1904, pp. 126, 141 [this volume, p. ??].

[10] *Ibid.*, p. 124 [this volume, p. ??].

[11] *Philosophical Review*, XIII, 1904, pp. 126, 135 [this volume, p. ??].

[12] *Ibid.*, p. 138 [this volume, p. ??].

[13] *Ibid.*, p. 131 [this volume, p. ??].

[14] *Ibid.*, p. 140 [this volume, p. ??].

own true self, including within its experience all possible points of view, and knowing that it includes them.[15] Thus we need, it is claimed, the Absolute Self, other than our present finite self, as an actually and eternally existent Judge, if we are to have truth.[16] Indeed, one's true Self, as such an Absolute Judge, must exist, if there is to *be* truth, whether known by any finite self or not; and this being so, there cannot be error,[17] or even ignorance,[18] without the true, all-inclusive Self as Absolute Judge.

Royce confesses that it is his voluntarism that is the secret of his absolutism;[19] but, in the light of what has been said, it would perhaps be truer to say that it is his provisional subjective idealism that drives him to take up voluntarism and to develop it in the direction of absolutism, a solipsism of the Absolute Self, as the only logical escape from a solipsism of the finite self. We "acknowledge" a transcendent, truth-knowing Absolute; we "define" the Eternal;[20] we "appeal to" an all-comprehending insight;[21] and the meaning of all this is that we *need* the belief in such an Absolute, and so we deliberately *take* it, not tentatively as a working hypothesis, as the pragmatist might do, but absolutely and outright, as if it were our indispensable possession.

Now it is true enough that, because we come to know things through experience, we naturally remember them as they were experienced, and imagine what we have not experienced as it would be, if experienced.[22] In this sense we do indeed appeal to experience, even when we refer beyond our own present experience. But what we must not forget is that what we intend to appeal to is not what the thing *is* experienced as, but what it *would be* experienced as, *if it were* experienced. The superhuman experience is, so far as these necessities of thought are concerned, simply a "regulative," not a "constitutive" concept. What the dogmatizing rationalist does, however, is

[15] *Ibid.*, pp. 140–142 [this volume, p. ??]; *William James and Other Essays,* p. 236 [this volume, p. ??].

[16] *Philosophical Review*, XIII, 1904, pp. 135–136, 138 [this volume, p. ??].

[17] *Religious Aspect of Philosophy*, pp. 393, 424–427; *Studies of Good and Evil*, p. 165.

[18] *The Conception of God*, pp. 28–29; *William James and Other Essays*, p. 237 [this volume, p. ??].

[19] *William James and Other Essays*, p. 235 [this volume, p. ??].

[20] *Ibid.*, p. 236 [this volume, p. ??].

[21] *Sources of Religious Insight*, p. 137 [this volume, p. ??].

[22] What do I mean by the object of which I know that I am ignorant? Dewey would say, presumably, a future content of my own experience; and Royce, a present (or super-temporal) experience of the Absolute. But why "future"? Why "super-temporal"? Why "of the Absolute"? And why "experience"? What I mean is a *present reality*, of which, in some cases, *I* may have *future experience.*

to substitute for the "would be ... if," a simple "is," or an authoritative "must be"; and so deft is he in his logical legerdemain that his trick imposes even upon himself, and he concludes that the all-inclusive experience of the Absolute Self actually *is* and *must be*. It is true enough that something besides our subjective practical needs underlying our judgments is needed as the foundation and measure of their claim to truth; but what is needed is not necessarily superhuman truth – although we would not argue that there is none – but independently existing reality, accessible, under whatever conditions, to human experience and knowledge.

Royce, however, having rejected all such realism, and having consequently, after the fashion of logical idealists, confused the concept of truth with that of reality, is compelled to pursue the course we have just outlined. And in so doing, we must insist, while he still refuses the most essential and valuable element in current pragmatism, he acts upon, and really adopts in principle, the most logically vicious element in what we shall call pseudo-pragmatism.[23] Having first gotten himself, by a philosophical mistake, into unnecessary difficulties, he finds that the only thing that will save him from the necessity of retracing his steps and acknowledging the error of his ways is to assume the truth of an unverifiable proposition (that an Absolute, such as he depicts, exists); he therefore naturally "wills to believe" it, and immediately does so, arguing its certainty from its necessity, forgetting that the necessity is itself quite artificial and unnecessary. Royce criticises current pragmatism for its tendency to lapse into this pseudo-pragmatism *as a doctrine*, "identifying the truth of an assertion with one's own individual interest in making the assertion";[24] but he himself seems to have done the same thing, not in theory, but in practice. His "absolute pragmatism" is a necessary theoretical veil to hide the *absolute pseudo-pragmatism* of his actual procedure in this particular instance.

And what are the consequences of this making of agreement with the judgment of the absolute, all-knowing Judge the criterion of truth? Evidently, that even if we avoid Bradley's conclusion that we can never possess the truth, we are not able, logically, to say that we know that we have it, because the standard of measurement is inaccessible. The completely integrated experience of the Absolute the individual man never gets before him;[25] and since the only workings by which our assertions can be adequately judged are "their workings as experienced and estimated from the point of view of such a larger life,"[26] the agnostic conclusion is logically inevitable. In spite of the assertion

[23] See Ch. XVIII, *infra*.

[24] *William James and Other Essays*, p. 232 [this volume, p. ??].

[25] *Sources of Religious Insight*, p. 148 [this volume, p. ??].

[26] *Ibid*., p. 149 [this volume, p. ??].

that the Absolute Experience is the experience of my true self, it remains a fact that I, the finite self, do not experience it. And indeed Royce seems to admit that the knowledge we get, such as it is, by adopting his absolutistic criterion is a knowledge of our own ignorance.[27] And if attention be called to the fact that this completely agnostic conclusion is untenable and must be given up, it ought to be sufficiently obvious that this can only mean that the absolutistic doctrine of the criterion of human truth has been shown to be self-refuting.

But, strange as it may seem, Royce has no intention of making any such admission. Unlike Bradley, who consistently acknowledges the necessary inconsistency of his absolutistic position, Royce argues, against the logic of his position, that even he who has adopted the absolutist criterion can have absolute knowledge of absolute truth, because, as a matter of fact, he has such knowledge in all propositions which are such that to deny them is to assert them under a new form.[28] What he has overlooked here is the fact (as we would contend it is) that even these "absolute truths" are reached, not by the absolutistic, but by a humanistic criterion.

That in his own thinking he is really guided by some more workable principle than is to be found in his own theory is increasingly evident as we look further into his discussion of absolute truths. While it is claimed that in the realm of pure logic and pure mathematics absolute truths are accessible,[29] it is admitted that all such propositions are essentially hypothetical;[30] "absolute truth is not accessible to us in the empirical world."[31] And yet he seems to teach also that some absolute categorical truth concerning reality is derivable from these universal hypothetical truths. Hypothetical judgments, it is claimed, give us negative information about the real world,[32] and in the end they tell us indirectly what is, by telling us what is not.[33] Moreover, they give us positive and categorical absolute truth about the nature of the creative will that thinks the truth.[34] Indeed Royce seems to have intimations of a wider field of accessible absolute truths, when he says that, in view of the irrevo-

[27] *The Conception of God*, pp. 28–29; *William James and Other Essays*, p. 237 [this volume, p. ??].

[28] *William James and Other Essays*, pp. 239, 244 [this volume, p. ??].

[29] *Ibid.*, pp. 212, 251 [this volume, p. ??].

[30] *Ibid.*, p. 239 [this volume, p. ??]; cf. *The World and the Individual*, Vol. I, p. 276.

[31] *William James*, etc., p. 249 [this volume, p. ??].

[32] *The World and the Individual*, Vol. I, p. 274.

[33] *Ibid.*, p. 277.

[34] *William James*, etc. pp. 247–248 [this volume, p. ??].

cableness of every past deed, every act of judgment that calls for a deed is irrevocably (and so, absolutely) true or false.[35] This last seems to be true only on the essentially pragmatic principle that judgments which satisfy every relevant practical purpose that ought to be considered (the purpose of the scientist, which is ultimately practical, being included) are really, and therefore absolutely, true; but this is very far from being consistent with Royce's absolutistic theory of the criterion of truth. Furthermore, much of the appearance of contradiction in the above-cited doctrines, first of the purely hypothetical character, and then of the essentially categorical character, of absolute truth, could be removed if only it were explicitly understood that this essentially pragmatic criterion might be employed. Universal truths are essentially hypothetical, until the conditions of the subject are included in the predicate, *sufficiently for all practical purposes which ought to be considered*; and then they become categorical. This *pragmatic absoluteness* of ordinary, humanly accessible, empirical truths, is the one thing needful to make Royce's "pragmatic absolutism" absolutely practical, and therefore presumably true. As it is, however, so far from his theory of truth being an absolute pragmatism, it remains at heart an absolute intellectualism.

* * *

J. E. Boodin's doctrine of truth is more pragmatic than that of other American realists. Not only does he contend that truth is sought from practical motives[36] and is instrumental;[37] even though he insists that the nature and test of truth[38] are not to be confused with the practical motive which leads to the seeking of it,[39] he offers, with reference to real objects, definitions of truth that are more pragmatic than intellectualistic.[40] His ideal for truth, however, seems to be intellectualistic. What thought really means, he says, is identification.[41] Truth, or the validity of an idea or belief, he defines as the agreement or tallying of that idea with its reality.[42] It is only because our description can never give the complete equivalent of real objects, and because so much of our

[35] *Sources of Religious Insight*, pp. 154–157 [this volume, p. ??].

[36] *Truth and Reality*, p. 216.

[37] *Ibid.*, pp. 123–124, 184, 217–218.

[38] *Ibid.*, pp. 195–197.

[39] *Ibid.*, pp. 103, 210–211, 224.

[40] *Ibid.*, pp. 183, 219, 236.

[41] *Ibid.*, pp. 98–99.

[42] *Ibid.*, pp. 210–211, 214, 234.

thought is merely symbolical, that he is forced, in certain cases, to go beyond this simple intellectualistic conception of truth.[43]

But when we consider that in typical judgment the subject is some real object, Boodin's would-be simple intellectualism and enforced pragmatism really signify the breakdown of the former theory. The attempt is made, however, to save a shred at least of intellectualism, when it is claimed that whenever our knowledge is concerned with social and ideal structures, it comes to share in the ideas it would represent, and so it is no longer *of* reality, but *is* reality. Its copying of the object is a reproducing of it; the knowing process, when it deals with psychological unities, *is* the nature of the object.[44] But at this point Boodin's thought does not quite accurately represent the facts. When the object of a knowing process is itself a knowing process, it is ordinarily not the same knowing process; and, as we have seen,[45] it is a much debated question whether there ever can be a knowing process which knows itself. Or, to speak logically rather than psychologically, in terms of ideas rather than in terms of knowing processes, even when B's judgment has for its subject A's whole judgment, then B's judgment, like all other judgments, must be to the intellectualist either tautologous or not quite true; for judgments, and even general facts of implication, are judged about by means of predicates which are themselves, as predicates, not facts but logical ideas, so that the relation of predicate to subject cannot be one of exact identity. But if what is meant is that B's judgment has for its subject the same reality as was taken as subject of A's judgment, and if B predicates of this same subject exactly the same idea (in the sense in which ideas of different persons can be the same) as A predicated, then B's judgment may be said to be identical with A's (except that it is B's rather than A's) ; but *the identity is not the truth*, for the supposed identity is not, like the relation we call truth, between the subject and the predicate of the judgment; it is between two judgments. It is thus found impracticable to deal in purely intellectualistic fashion with even the small corner of truth which Boodin has sought to reserve for such treatment.

[43] *Ibid.*, pp. 214, 219.

[44] *Truth and Reality*, pp. 219–221, 223.

[45] Ch. XIV, *supra.*

VOLUNTARISM IN THE ROYCEAN PHILOSOPHY

John Dewey. "Voluntarism in the Roycean Philosophy." *Philosophical Review* 25.3 (May 1916): 245–254.

I am not about to inflict upon you a belated discovery that voluntarism is an integral factor in the Roycean theory of knowledge. Were it not obvious of itself, we have the emphatic utterances of Professor Royce himself in his address to this Association twelve years ago. Following a clue in that paper, it is my purpose to present some considerations relative to the relationship of voluntarism and intellectualism[1] in the earliest phase of Mr. Royce's published philosophy, thinking that the matter has historic interest and that it involves points relevant to forming a critical judgment of his later developments. Let me begin by quoting Mr. Royce upon his own early attitude. In 1881 he wrote a paper in which he "expressed a sincere desire to state the theory of truth wholly in terms of an interpretation of our judgments as present acknowledgments, since it made these judgments the embodiments of conscious attitudes that I then conceived to be essentially ethical and to be capable of no restatement in terms of any absolute warrant whatever." And, referring to his change of views in the last respect, he says: "I am still of the opinion that judging is an activity guided by essentially ethical motives. I still hold that, for any truth seeker, the object of his belief is also the object of his will to believe.... I still maintain that every intelligent soul, however weak or confused, recognizes no truth except that which intelligently embodies its own present purpose."[2] The statement is explicit. Taken in connection with the earlier position, it arouses curiosity as to the reasons for the transition from subordination of intellect to will to the reversed position.

I first turn to the paper of 1881.[3] The paper was one of the addresses at the Kantian centenary. Its title is, significantly, "Kant's Relation to Modern

[1] To avoid misunderstanding I would say that intellectualism is here used not in antithesis to empiricism or to sensationalism, but to denote any philosophy which treats the subject-matter of experience as primarily and fundamentally an object of cognition.

[2] *Philosophical Review*, Vol. XIII, p. 117 [this volume, pp. ?].

[3] *Journal of Speculative Philosophy*, Vol. XV, p. 360.

Philosophic Progress." It makes an attempt to assess, on one hand, certain contemporary movements in the light of Kant's critical principles, and, on the other hand, to indicate the ways in which Post-Kantian thought suggests a reform in Kant himself. The first part holds that Kant's criticism still bars the way to every attempt at a philosophical ontology. The ontological monism of Mind-stuff, of Panlogism,[4] of Alogism alike stand condemned as illegitimate excursions into ontological dogmas. The reforming portion centres about the Kantian dualism of sense and reason. The difficulty left over by Kant is clearly stated: A given category, say causality, is nothing unless applied to experience. But how can it be applicable? Only in case experience furnishes instances of uniform succession. But in that case, why the category? Thought is not needed. Or if it is said that it is necessary to introduce necessity, how about necessity? If sense experience doesn't justify it, then it too is futile. If it does, thought is superfluous. Either sense already conforms to order or else it is inexorably at odds with it. Now Royce's solution is, in brief, as follows. Sensuous, irresistible presence, presence wholly unquestionable, absolutely certain, is an ultimate fact: a datum. Spatiality (as had just been claimed by Professor James) exists also as just such a simple irresistible quale. Succession as instantaneous sequence is also such a datum. What thought, as essentially spontaneous, essentially active, does is to give the immediate momentary datum a reference beyond the present moment. However, the reference is not at first to an external cause. The primary reference is a time reference. In every cognitive act there is an assertion that the given data stand for, symbolize, recall, resemble, or otherwise relate to data that *were* real in an experience no longer existent. In short, thought primarily asserts or acknowledges the past. Then there is acknowledgment of the future: the synthesis of anticipation. Chief of all there is acknowledgment of other conscious beings than ourselves, acknowledgment of a universe of

[4] With respect to the problem of the evolution of Royce's later philosophy in its entirety, it is extremely important to note the ground for rejection of that Panlogism which was later accepted. It is connected with the fact of evolution. How can an Absolute Rational Whole change? How can it consist with progress from an earlier lower to a later higher? Or how can we think of every stage of the historical progress as itself a goal, when "the first starving family, or singed moth, or broken troth, or wasted effort, or wounded bird, is an indictment of the universal reason"? "Either evolution is a necessity ... and the Absolute must be conceived as in bonds, or else it is irrational and the Logos must be conceived as blundering." I call this ground of rejection extremely important, for surely the key-note of all Royce's later philosophy is the formulation of a way to combine the notion of the eternal moment with genuine struggle and defeat in time. The ethical connecting link in the *Religious Aspect* is the conviction that all genuine virtue or moral good exists at the point of overcoming evil. Hence the Absolute would be lacking in moral quality unless in its eternal changelessness it included and overcame the temptations and struggles of the finite and changing.

reality external to ourselves. Now "for the objects of these acts no possible theoretical evidence can be given more nearly ultimate than the one great fact that through acknowledgment and anticipation they are projected from the present moment into the past, future, and possible world of truth." And finally, "the goal of philosophy can be found only in an ethical philosophy. The ultimate justification of the act of projecting and acknowledging the world of truth constructed from sensible data must be found in the significance – *i.e.*, in the moral worth – of this activity itself." In short, the act of thought or judgment by which sense-data become a knowable world of objects and a world of other minds is itself an act, an affirmation of the spontaneity of consciousness. Hence it is impossible to get behind it intellectually or give it an absolute warranty: it has to be justified in terms of its own worth as an act, – that is to say, ethically.

The student of Royce's writings will see here certain ideas which are found in all his later writings: The acceptance of empirical sense-data as ultimate, things simply to be accepted as they are; the conception of them as intrinsically momentary, yet while including in themselves the fact of immediate or instantaneous sequence; the conviction that the problem of knowledge is, on the one hand, the problem of the temporal reference of these data, and, on the other, the problem of their reference to other minds, to orders of experience transcending our own; the belief that knowing is an act, an assertion, an acknowledging. Conjoined with them is the unfamiliar text that the active side, the voluntaristic and ethical side, is ultimate, and that no theoretical justification for it can be found. In his *Religious Aspect of Philosophy* published only four years later, we find established, however, the reversed relationship: we find set forth the Roycean all-inclusive thought which eternally realizes itself in all fragmentary and partial acts of will. From henceforth acts of will are not self-justifying. The ethical is transcended in the cognitive.

I make no pretense to tell how the change came about, in the sense of ability to reconstruct Mr. Royce's mental biography. There are, however, a number of indications of the *logical* sources of the change, which are found in the *Religious Aspect*; and to them I invite your attention. In the first place, the Fichtean tone of the acknowledgment in the first essay of the reality of other experiences, other wills, than our own is evident. It is not so much a bare fact that we acknowledge them, as it is a supreme moral duty to acknowledge them. Our natural, carnal acknowledgment is not of them as Experiences like our own but rather as factors which affect our own well-being: selfishness is the radical moral evil. This *motif*, implicit in the earlier document, is explicit in the *Religious Aspect*. But recognition of this fact brings with it the recognition of the reality of clash of wills, and of the need of an organization of wills or aims. To restate the treatment, rather than to try to paraphrase it, if my own cannot be the ultimate law for other wills neither can the will of any

other be the law of my will. There must be an inclusive organization which determines the aim of each alike. The same logic applies within one's own purposes; they too conflict and clash. Scepticism and pessimism are but the consciousness of this clash, in recognizing that amid plurality of aims there can be no ground for one making any one supreme, and no guarantee of abiding satisfaction. Moral certainty and moral confidence alike demand an organization of aims. Now such an organization cannot be itself an affair of will; it must be a matter of fact, a matter of reality or else of unreality, and hence something whose primary relationship is to knowledge. If it is valid, it is not because of anything in the "moral worth of the activity itself" or it is just that worth which is put in jeopardy by the conflict, the plurality, of wills. The moral worth of the will can be established only on the basis of an organized harmony of wills as an established fact. Whether such an organization exists or not is a matter of truth, of knowledge, not of volition. For if one say that one wills that such an organization exist, the dialectic recurs. This is but an individual will; an assertion of one will among many. And why should *its* assertion of an organization of wills be any better than any other assertion of bare will?

In his *Defence of Philosophic Doubt* Mr. Balfour[5] had stated expressly that preference for one ethical end over another must itself be a purely ethical matter – that is a matter of choice underivable from any theoretical judgment whether scientific or metaphysical. Each end founds a system of propositions all of which are logically coherent with one another. If revenge is an end-in-itself for me, then the proposition prescribing shooting a man from behind a hedge is a dependent ethical proposition belonging to that system. It is not knowledge but arbitrary choice which determines the end which fixes the dependent logical or theoretical system. It is fairly open to question whether such a conclusion does not follow from the principles set forth in Royce's earlier essay, when the clash of aims or acknowledging wills is taken into account. And, in the words of Mr. Royce, "The reader may ask: 'Is all this the loftiest idealism, or is it simply philosophic scepticism about the basis of ethics?'"

The moral will depends then upon an insight into a harmonious organization of all wills – an end in which pluralistic aims cease to be conflicting because they are taken up as elements into one inclusive aim. But does such an organization exist? This leads us to the discussion of knowledge and the criterion of truth. The conclusion is the absolutism of an all-comprehending eternal consciousness which has remained the central tenet of Mr. Royce's writings. "All reality must be present to the Unity of the Infinite Thought" (*Religious Aspect*, p. 433). "The possibility of an ontology and the supposed

[5] See *Religious Aspect*, Preface, and pp. 128–130.

nature of the ideal absolute knowledge" which, true to the spirit of Kant, Mr. Royce had denied in his earlier essay,[6] is now asserted as the sole way out of ethical scepticism. The transition to Absolutism is through (a) discovery of the scepticism latent in voluntarism when that is made ultimate; (b) the demand for a community of aims or organization of wills;[7] (c) the discovery that all recognition of ignorance and error, all sceptical doubt involves an appeal to a Judger or Thought which included both the original object and the original judgment about it. The analogy of such a comprehensive judger with the required moral organizations of wills which, in their separateness, clash, is obvious enough.

In being reduced to a secondary place, voluntarism is not, however, superseded. It persists, first, in the conception of the method of approach to Absolutism, and, secondly, within the conception of the Absolute itself. The first step out of the world of doubt is through the World of Postulates – a conception substantially identical with the acknowledging activity of the earlier essay. The external world may be regarded as an assumption, as a postulate, which satisfies certain familiar human needs.[8] Subjected to analysis this postulate turns out to be, in the rough, "an active assumption or acknowledgment of something more than the data of consciousness." The immediate data are of that fragmentary and transient nature which was earlier noted. Hence judgment must do more than reduce these present data to order; it must assert that context beyond them in which they exist and in which they have their real meaning and truth. This is, again, the corrected restatement of the Kantian problem. We are not faced with an incredible act of thought which forms sense-data as such, but with the act of thought which supplements the specific and empirical givens, in their temporal limitations, with the larger setting which gives them objectivity. This restatement at one stroke does away with the trans-empirical Ding-an-sich, putting in the place of a trans-empirical Reality, a trans-momentary one, and with the subjectivistic character of sense-data, in any sense of subjectivism which identifies them with a particular knowing self; – since sense-data are given in the most emphatic sense of given.

The sketch which Royce sets forth of the psychology of the process of the postulating activity of thought makes explicit the voluntarism implicit in the idea of the postulate. It is quite unnecessary to recall its details to you. The preface of the book makes an acknowledgment to Professor James, and the address of 1903 to which I referred at the outset expressly connects the

[6] *Journal of Speculative Philosophy*, Vol. XV, p. 371.

[7] The student of Royce will be interested in comparing this with the explicit doctrine of the Community in Royce's latest work. Peirce's influence is presumably effective in the earlier as well as the later writing, though it is less explicit in the *Religious Aspect*.

[8] *Religious Aspect*, p. 292.

influence of James with this voluntarism. The activity which transforms and transcends the immediate data is, psychologically, of the nature of attention; attention is essentially will, and it expresses interest.[9]

A voluntaristic element, persisting all through Royce's philosophy, is seen in his treatment of a cognitive idea. An idea to be cognitive must be a part of a judgment, or itself an implicit judgment. For a judgment to be true or untrue means that it agrees or does not agree with its object – an object external to the ideas connected in the judgment. Yet the judgment must always have something which indicates what one of the many objects of the world it picks out for its own, which one it cognitively refers to. In other words, the cognitive idea is, in its objective reference, an intent. The voluntaristic implications of the cognitive idea as intent are in no way elaborated in this document as they are, for example, in *The World and the Individual*, but the root idea is present.

It is no part of this paper to follow the logic of the treatment of the possibility of error and the method which leads to the conclusion: "All reality must be present to the Unity of the Infinite Thought" (p. 433). The purpose of the paper limits me to noting, first, that we have now found the ethical desideratum – the ontological reality of an organized harmony of all aims. For being a complete *thought*, a complete knower, it must have present in it all desires and purposes, and being a *complete* or perfect knower, it must also present in itself the realities in which aims find their realizations. Secondly, we note that in the formulations of this absolute knowing consciousness intellectualistic considerations predominate to a greater extent than in Mr. Royce's subsequent formulations. The Infinite Truth is conceived by predilection as Knower; it is referred to as Seer, as Spectator, as Judger. The function of Infinite Thought in *knowing* our aims and *knowing* the objects in which they are fulfilled is most dwelt upon. In the treatment of the problem of evil, however, that voluntaristic aspect of the Absolute which is made so explicit in later writings appears in germ. Goodness is not mere innocence but is transcending of evil. In the divine our evil is present but is transcended in good. But such transcendence is by way of conquest. The cognitive Seer possesses also a Universal Will realized in it.[10]

It is not my intention to engage in criticism of either the conclusion or the method followed in reaching it. I shall, however, indulge in a few comments which may suggest the direction which my criticism would take if occasion and time permitted. In the first place, I would point out that all solutions are relative because relevant to the problem from which they set out. In the last analysis, everything depends upon the way in which the problem is formed

[9] *Religious Aspect*, pp. 308–324.

[10] *Religious Aspect*, pp. 456–459.

and formulated. With Mr. Royce the problem is fixed by the results of the Kantian philosophy, taken in its broad sense. It seems axiomatic to him that the problem of knowledge is the problem of connection of sense-data which are facts of consciousness with the spontaneous constructive activity of thought or judging – itself a fact of consciousness.[11] It is significant that his discussion of the possibility of error sets out with a provisional acceptance of Ueberweg's definition of judgment as "Consciousness about the objective validity of a subjective *union of ideas*" (italics mine).

My second line of comment may be introduced by reference to the fact that I have spoken of the voluntarism of Royce, not of his pragmatism. I have done so in part because pragmatism (while it may be construed in terms of facts of consciousness, and so be identified with a psychological voluntarism) may be stated in non-psychical terms. But in greater part it is because the original statement of Royce, the one where a critical voluntarism still lords it over an ontological Absolutism, conceives will purely as Act. It is the *act* of Acknowledging which is emphasized. There is no reference to determination or measure by consequences. Now Peirce repudiated just such a position. He says, referring to Kant, that this type of position would be Practicalism, and that he adopted the word Pragmatism, still following a Kantian suggestion, to emphasize empirical consequences. The importance attached by James to consequences, last things, as a test of pragmatism, is well known.

Voluntarism rather than pragmatism is found in the Roycean notion of judgment. When intent or purpose is conceived of as the essence of judgment or cognitive idea, the intent is to know. The reference is intellectualistic; connection with the object intended is cognitive, not practical. As "attention constantly tends to make our consciousness more definite and less complex" (p. 316), so of the process of thought knowing, it is said: "The aim of the whole process is to reach as complete and united a conception of reality as is possible, a conception wherein the greatest fullness of data shall be combined with the greatest simplicity of conception" (p. 357). Construing the operation of fulfilling a supreme cognitive interest in terms of purpose and will is a very different thing from construing the cognitive interest in terms of a process of fulfilment of *other* interests, vital, social, ethical, esthetic, technological, etc.

Finally, just because consequences and the plurality of non-intellectual interests which cognition serves are ignored, the ethical voluntarism of the

[11] In the first published writing of Mr. Royce with which I happen to be familiar, entitled, "Schiller's Ethical Studies" in the *Journal of Speculative Philosophy*, Vol. XII, p. 385, the peculiarity of Kant is stated as follows: "Kant's philosophy is a glorification not of self but of Consciousness. In Consciousness is all knowledge rooted, through Consciousness is all truth known," etc.

essay of 1881 is itself an absolutism – ethical to be sure, but absolutism. The acknowledging activity must finally be justified by "the significance – *i.e.*, the moral worth – of this activity itself." It would be hard to find anything less congenial to the ethical side of pragmatism than a doctrine which justified moral purpose and motive by something residing in its own activity, instead of in the consequences which the activity succeeds in making out of original vital and social interests in their interaction with objects. Putting the matter somewhat more technically, the transition from the voluntarism of the early essay to the intellectual absolutism of the later book was indeed logically necessary. A will which is absolute is purely arbitrary, and its arbitrariness leads to scepticism and pessimism for the reasons pointed out by Royce. "Will" needs a rational measure of choice, of preference, in the selection and disposition of ends. If it does not find this measure in a coordinated foresight of the consequences which depends upon acting from a given intent, it must find it in some *pre-existing* Reality, which, of course, is something to be known. In short, what the transition from the voluntarism of the earlier essay to the intellectualism of the later exhibits, is not a change from pragmatism to absolutism but a recognition of the objective absolutism latent in any ethical absolutism. I would go as far as to suggest that the ulterior issue involved in the theory of knowledge is whether regulative principles have a prospective and eventual reference, or whether they depend upon something antecedently given as an object of certitude – be it fixed ready-made goods, fixed ready-made rules, or fixed Absolute.

THE EARLY PRAGMATISM OF JOSIAH ROYCE

George Dykhuizen. "The Early Pragmatism of Josiah Royce." *The Personalist* 18.2 (April 1937): 126–133.

In the years 1878 to 1881, when Royce was making his first contributions to philosophical literature, it was clear that he had definitely identified himself with the pragmatic movement, and had adopted James's theory of knowledge as his own. A scant four years later, however, in the year 1885, with the appearance of his first published book, *The Religious Aspect of Philosophy*, it was equally obvious that Royce had experienced a radical change in his point of view and had adopted a theory of knowledge based upon a form of absolute idealism. The steps in this transition and the reasons to be assigned for them constitute an interesting as well as important chapter in the story of Royce's philosophical development.

Royce was from the first impressed with the idea that the present moment alone is real and that everything beyond the immediate present is the product of postulate. In the year 1878, in his unpublished *Thought Diary*, he wrote:

> Every man lives in a Present, and contemplates a Past and Future. In this consists his whole life. The Future and Past are shadows both, the Present is the only real. Yet in the contemplation of the Shadows is the Real wholly occupied; and without the Shadows this Real has for us neither life nor value. No more universal fact of consciousness can be mentioned than this fact which therefore deserves a more honorable place in Philosophy than has been accorded to it.[1]

This idea that the data of the present alone are real and that when taken apart from a postulated past and future they are entirely meaningless serves as the point of departure for Royce's early epistemology.

[1] "Thought Diary," Berkeley, 1878–9, Harvard University Library, Unpublished, entry for April 3, 1878. Cf. also, "The Nature of Voluntary Progress," *Fugitive Essays*, p. 113; "Tests of Right and Wrong," *Ibid.*, p. 199 ff.; "On Purpose in Thought," *Ibid.*, p. 249 ff.; and "Kant's Relation to Modern Philosophic Progress," *Journal of Speculative Philosophy*, XV, 376 ff.

In the essay entitled "On Purpose in Thought"[2] (1880) Royce discusses the problem as to the final end of purely theoretical thought. Among the theories rejected is that which holds that the purpose of thought is to produce ideas which correspond to an external world. Royce's objection to this view are that we cannot understand how an idea can correspond to a reality which by hypothesis is alien to it and that we cannot understand how we are to get outside the narrow circle of our ideas to know whether or not the purpose of thought has been realized. The rejection of the theory of correspondence is mentioned because in the very next year it becomes the cornerstone of Royce's own theory. For the present, Royce maintains that the true purpose of thought is to build up "an ideal picture of a world of experience that shall be seen as One."[3]

Royce both agrees and disagrees with Kant as to the mechanism by means of which thought attains its end. Royce agrees with Kant that in consciousness there is always a *given*, which the mind passively receives, and also a spontaneous activity of thought. But Royce disagrees with Kant as to the nature of these two factors in the cognitive process. For Kant, thought rearranges its sense-material and makes it conform to the laws of the mind. For Royce, on the other hand, the *given* is ultimate. The present moment with its spatiality and temporal sequences is complete in itself and needs no "officious understanding" to rearrange it. What the mind does is to give to the sense-data of the "puny present moment" a reference to the past and future. It does not enter in and give form to sense, but, getting its cue from present sense, it constructs a world into the past and future.[4]

Our thinking activity occurs in order to enable us to satisfy certain needs of our nature, and receives its ultimate justification from its moral worth.[5] In *Fugitive Essays* Royce says:

> Beliefs are always the satisfaction of individual wants.... The adjective "true" is applied to a belief by the one who's intellectual want it satisfies, at the time when it satisfies them.... A system of beliefs is held, just as a system of government endures, so long as it seems to the men concerned advantageous to cling to it. [6]

[2] *Fugitive Essays*, pp. 219 ff.

[3] "On Purpose in Thought," *Fugitive Essays*, pp. 259–260.

[4] "Kant's Relation to Modern Philosophic Progress," *Journal of Speculative Philosophy,* XV, p. 378.

[5] Cf. *Ibid*., p. 380.

[6] "The Nature of Voluntary Progress," *Fugitive Essays,* pp. 112, 113.

Truth, however, is not a private individual affair. "My needs are narrow and changing. It is humanity in its highest development to which truth will be acceptable."[7] For one's personal narrow views should be substituted the broader social view of mankind at large.

The influence of William James on the thought of Royce at this time is clearly marked. In an article written a considerable number of years later Royce comments on this stage of his thinking and speaks of having been "deeply influenced by Professor James's earlier lectures and essays." He further says:

> I may venture to tell you that once in my life, before I fell a prey to that bondage of absolutism wherein now I languish, there was a time when I was not a constructive idealist of any sort, and when, if I understand the meaning of the central contention of pragmatism, I was meanwhile a very pure pragmatist.[8]

That Royce at this time was not entirely satisfied with James's theory of ideas is indicated in an article which appeared in the year 1882, the essay entitled "Mind and Reality."[9] In this article Royce discusses and accepts the idealism of Berkeley. In his discussion he gives a glimpse of one of the reasons why he found James's theory of ideas inadequate and why he inclined to Berkeley's theory of idealism. Though he remained convinced of the truth of James's doctrine that ideas are essentially practical in character, Royce was equally convinced that this doctrine did not state the whole truth about ideas. While true ideas do lead to successful activity, they have another characteristic which explains why they are successful, namely, they correspond to reality as it actually is. This reality is not the creation of any practical intention of ours, but is in some way independent of our ideas and stands authoritatively over against them. In contrast to his former position that thought does not aim to correspond with an external reality, Royce now asserts that the theoretical demands of our thought seem to require that there be an external reality that corresponds to our ideas and so gives them truth. Royce felt that James's doctrine was only a half-truth and needed to be supplemented, but not rejected. The philosophy which Royce thought offered the greatest promise for the correspondence theory of ideas was that of Berkeley which

[7] "Doubting and Working," *Fugitive Essays*, p. 338.

[8] "The Eternal and the Practical," *Philosophical Review*, XIII, p. 118.

[9] Cf. *Mind*, VII (1882), pp. 30–54. An article entitled "'Mind-stuff' and Reality" preceded the one mentioned. In it Royce had promised a later article which would be "just to the facts of consciousness and adequate to the demands of the philosophy of nature." (Cf. *Mind*, VI, 1881, pp. 365–377.) The essay on Berkeley is the one promised.

Royce now makes his own. "Our thought is true by reason of its correspondence to the facts of an actual consciousness external to our own."[10]

Though Royce expressly states in this article that his acceptance of Berkeley's philosophy is due to the theoretical demands of thought, it is fairly certain that the moral and religious demands of his nature also inclined him to that theory. In his earlier essays Royce had been maintaining that the essence of the religious attitude is "neither optimism nor pessimism, but simply earnestness, determination to make the world significant."[11] But such a view is really quite disheartening in the light of the little we know about reality. What hope and comfort can be derived from all our striving, he asks later, in referring to his early philosophy of religion, if we are always confronted with the disheartening thought that the next moment may be the last?[12] Berkeley's theory, since it postulates that the universal consciousness is a divine spirit, makes it possible for us to believe that "universal goodness is somehow at the heart of things."[13] And an adventurous faith in the existence of a universal goodness and its eventual triumph furnishes us at least with an incentive for continued striving.

The reasons for Royce's transition from Berkeley's theory of ideas to that of absolute idealism are of equal interest. And again it would seem that both practical and theoretical considerations are at work in Royce's mind. In the first place, Royce recognizes that he has escaped from the religious and theoretical skepticism of his earlier essays only by a sheer act of will. He has postulated the existence of a universal and good consciousness, but he has by no means proved its existence. And Royce holds that the ways of postulates, while superior to that of a resigned skepticism is by no means the ideal way. He writes:

> The world of postulates was a brighter one only because we determined to make it so. But there was something lonesome in the thought that the postulates got, as answer from the real world, only their own echo, and not always that. Their world was rather their own creation than an external something that gave them independent support.[14]

The way of postulates does not give us that which we so ardently desire, namely, an absolute assurance that all our moral striving shall not have been

[10] "Mind and Reality," *Ibid.*, p. 35.

[11] "George Eliot as a Religious Teacher," *Fugitive Essays*, p. 289.

[12] *The Religious Aspect of Philosophy*, pp. 291–292.

[13] *Ibid.*, p. 292.

[14] *Ibid.*, p. 435.

in vain. "Courage indeed we must have, but is religion no more than courage? Nay; we must have if possible some eternal Truth, that is not our postulate, to rest upon."[15]

It was in his attempt to meet the theoretical weakness of Berkeley's theory of knowledge that Royce finds what he believes to be the "eternal Truth" which leads him out of a world whose existence can only be postulated and into a world whose reality he believes can be logically demonstrated. Though Royce has accepted Berkeley's epistemology, he has done so only provisionally, for he recognizes that Berkeley's theory is burdened with an inherent subjectivism which makes it impossible for him to give an adequate account of how we can know when our ideas are true. In the years immediately following the publication of the article on Berkeley, Royce devoted himself to a search for a way out of subjectivism and its attendant skepticism. The manner in which Royce stumbled upon the path which was to lead him out of his difficulty, he himself tells us:[16]

> From the depths of this imperfectly defined skepticism, which seemed to him provisionally the only view he could adopt, the author escaped only by asking the one question more: "If everything beyond the present is doubtful, then how can even that doubt be possible?" With this question that bare relativity of the present moment is given up. What are the conditions that make doubt logically intelligible? These conditions really transcend the present moment. Plainly doubt implies that the statement doubted may be false. So here we have at least one supposed general truth, namely, "All but the immediate content of the present moment's judgment, being doubtful, we may be in error about it." But *what then is an error?*

In answering this question Royce comes to his well-known conclusion that if the possibility of error is to be made intelligible we must hold to the existence of an all-inclusive and all-knowing mind whose thought constitutes "Absolute Truth and Absolute Knowledge."[17] For then an error can be explained as "an incomplete thought, that, to a higher thought, which includes it and its intended object, is known as having failed in the purpose that it more or less had, and that is fully realized in this higher thought."[18] Moreover, the subjectivism of Berkeley's theory is overcome, for,

[15] *Ibid.*, p. 332.

[16] *Ibid.*, p. 389–390 (Italics Royce's).

[17] *Ibid.*, p. 423.

[18] *Ibid.*, p. 425.

> You, in one sense, namely never *do* or can get beyond your own ideas, nor ought you to wish to do so, because in truth all those other minds that constitute your outer and real world are in essence one with your own self. This world of ideas is essentially *one* world, and so it is essentially the world of one self and *That art Thou*."[19]

In these early beginnings of Royce's epistemology there are discernible certain *motifs* which persist throughout his entire intellectual development. One such *motif* is the desire to harmonize the voluntaristic and intellectualistic interpretations of the nature of ideas. For in this early period as well as in all later periods of his thought Royce never discards the doctrine of James that a true idea is one which fulfils the purpose for which it was called forth. On the other hand, he cannot but feel that a true idea is one which also faithfully corresponds to an external object which stands authoritatively over against it. The problem of making consistent these two different theories of ideas is never frankly undertaken by Royce till he writes his *magnum opus*, and then the proffered solution becomes the cornerstone of his main argument.[20]

Another prominent *motif* in this early period is the religious one. In his early writings as well as in all the later ones Royce is deeply concerned with arriving at a theory of knowledge that will be not merely theoretically satisfactory, but one that will also furnish support to a religion of assurance and comfort rather than to one of courage and risk. It is this deep desire on the part of Royce which undoubtedly moves him to attempt to demonstrate the existence of an absolute and divine mind whose will is eternally triumphant and whose purposes are eternally fulfilled. How such triumph and fulfillment in eternity can be harmonized with struggle and defeat in time constitutes another crucial problem of Royce's philosophy.

[19] *The Spirit of Modern Philosophy*, p. 368 (Italics Royce's).

[20] Cf. *The World And the Individual*, Vol. 1, in which Royce discusses the internal and external meanings of ideas.

Section Three

Writings of John Elof Boodin

THE OUGHT AND REALITY

John Elof Boodin, "The Ought and Reality." *International Journal of Ethics* 17.4 (July 1907): 454–474.

Physical science attempts to describe reality in terms of three dimensions or independent variables, *viz.*: time, space, and energy. The philosophic meaning of these I have attempted to define elsewhere.[1] If we look a little more closely, however, we shall find that another dimension is implied besides those it avows, *viz.*: that the universe is amenable to ideals; that the flux of things has meaning. This tacit demand, which is the very spirit of science, cannot be reduced to mere monotonous uniformity; it has nothing to do with spatial distance; it is not accounted for by the mere transmutations of time, which must, on the contrary, be evaluated and given direction from another dimension.

True, materialism has always insisted that such a dimension is superfluous. But materialism makes far too great demands on our credulity: Reason grafted on chaos by accidental variation, ideals superimposed upon the chance play of atoms by accident, and this the truth, the absolute truth about it! Far saner seems to me the attitude expressed by Plato in the *Meno*: "That we shall be better and braver and less helpless if we think we ought to inquire, than we should have been if we indulged in the idle fancy that there was no use in knowing and no use in searching after what we know not; that is a theme upon which I am ready to fight, in word and deed, to the utmost of my power." For must not the materialistic assumption that truth is an accident prove suicidal to materialism itself? Materialism, too, is founded upon a faith in ideals. Democritus, no less than Plato, tries to penetrate beyond the mere seeming, though for the former the real truth is atoms and the void, for the latter, the idea of the good. We must somehow provide for value and significance in our world. Else why philosophize? If truth is an accident, if the flux of things has no absolute direction, then truth and error, virtue and vice are the same, and it becomes as absurd to speak of a materialistic philosophy as of any other kind. The same accident that makes ideals can unmake them. I cannot conceive of truth as even an ideal limit in such a world.

[1] See especially the author's monograph, "Time and Reality," No. 26 in the *Psychological Review* Monograph Series; also his articles on "Space and Reality" in the *Journal of Philosophy, Psychology and Scientific Methods*, Vol. III, Nos. 20 and 22.

To have truth and worth in the universe it is not necessary to be "stoppers of the universe," but it is necessary that the process should be in some way selective. As in the dark all cows are gray, so in a flux without direction there can be no valid distinction of values. I cannot agree with many venerable thinkers that only a static universe guarantees worth. On the contrary, I cannot see how ideals or worth can have any meaning in a static world. In such a world everything is, as it were, dumped together, and error and evil, in so far as they exist, have as much claim as truth and goodness. Ideals can only have meaning in a selective process. Even the ideal of uniformity can have meaning, as Poincaré has shown, only in a universe of flux. For it exists in the service of prediction, and what prediction could there be in a stillborn world? Flux on the one hand, and an absolute direction eliminating what is contrary to it on the other: that is all the guarantee we need.

This direction is not constituted by what each individual desires. To make the satisfaction of impulse its own criterion would destroy all criteria. For impulse is legion, and life would resolve itself into a chaos of conflicting desires; into what seems to each individual moment. If satisfaction is the test of worth, then whose satisfaction, that of the pig or the man, the fool or Socrates? The worst tragedy of all perhaps is that some are satisfied when they ought not to be. The optimism that the satisfaction of impulse is its own guarantee, presupposes a preëstablished harmony between inclination and right, the individual and the whole, the present and the future, which has not been attained and which can only come by the accommodation of impulse to a standard more objective than itself. The limit which in the end determines worth must itself be independent of impulse. It must determine survival. That definite lines of conduct exist must somehow be due to it. This is real idealism, as opposed to naturalism under whatever guise, idealistic or materialistic. Naturalism makes the Ought a mere function of what is. On the contrary, it must legislate to that which is. What pleases may not be what ought to please, and if we indulge in tendencies that ought not to please us, we do so at our own peril.

Santayana holds that the ideal must be the outgrowth and index of impulse; else there could be no false judgments. But how could there be either true or false judgments if impulse is its own criterion? These involve a reference to a constitution beyond impulse. I am quite ready to admit that ideals appear at a certain stage in the biological series; but when they appear they appear as leaps, not as mere products of the past. But why do such leaps rather than others have survival value? This must be because the universe somehow has a direction of its own. It is not accounted for by mere chance. If ideals cannot pass upon impulses unless they grow out of them, they surely cannot do so if they *merely* grow out of them. They must have their own credentials. Strange that thinkers who ridicule Plato for hypostatizing the Idea of the Good, which when properly understood is more than

an hypostasis, should find it so easy to hypostatize the mechanical ideal of atoms and molecules!

To say with the Hegelians that the ideal is already implicit or potential in the impulses must mean very much the same thing, if it means anything. That impulses are good or bad is hardly implied in the impulses. The question of worth can only arise when impulses are evaluated according to a context. That the impulsive satisfaction has worth in the end is not due to its being desired, but that it fits an objective constitution, present and future. This gives "immortal intent" to the process. That the eternally prudent may be sacrifice, that what it aims at cannot as such survive, can be no part of short-sighted impulse.

Hedonism when sorely pressed must have recourse to "on the whole and in the long run," not realizing that it thus abandons satisfaction or pleasure as the ultimate standard, and substitutes a selective constitution. It is this, and not the mere subjective satisfaction or dissatisfaction, which decides what structures can survive and therefore what pleasures can survive.

Neither does self-realization furnish a standard. Consistently stated, it is simply natural history, not ethics. Perhaps the most picturesque statement of this doctrine is the speech of Aristophanes in Plato's Symposium. The myth of the division of the double men and double women and the men-women and each half longing for the other, signifies that love, or the yearning of the soul, means self-completion or the attaining of one's own, the complement of one's being. But there are many types of selves, and each type desires its own fulfilment. If self-realization is to be the criterion of life, what self is to be realized, the baboon self, the pig self, or what sort of self? If all but human selves are to be excluded, what sort of human self? Not the criminal self nor the insane self, surely? Only a normal self could be the standard. As Plato says, It must be a very wise man who is to be the measure. But what is normal?

Psychologically viewed, the ego may sometimes aim to realize or define itself. It may aim to realize social institutions. It does aim to realize its own tendencies, egoistic and social. But what determines the worth of the activity is not the mere realization of tendencies, but its conformity to the ideals of the race and ultimately to the direction of history. Perhaps such a self has no business to be. Its whole universe or perspective may be sordid and mean, its complement brutal. In that case the ethical process is not self-realization, but the elimination of that type of ego. The doctrine of self-realization, tacitly at least, assumes a preëstablished harmony between the ideals of the individual and the whole, or that if each one desires his own realization he at the same time desires the good of the whole. Such a fallacy could only be maintained by such ambiguous shiftings as that between the real good as opposed to the apparent, the true to the actual, the eternal to the temporal, in all of which it takes no great insight to see that there is a reference to a constitution beyond the individual ego.

Even biologically, self-realization can hardly be seriously maintained. We have become so constituted as a result of the demands of the universe upon us that we respond in certain ways. To look out for ourselves is only one of the many demands that are made upon us. Our adjustment in the nature of things is largely institutional and must become more so as a result both of biological and social heredity. To fit into institutions, present and future, must, therefore, be the biological test of an ego worth preserving. The test in the end is extra-individual. And as institutions too are subject to the law of survival, the test becomes extra-institutional as well. It again implies the attribute of absolute direction. A man, moreover, who should be as self-conscious as the self-realization theory demands would be a pretty sickly and clammy sort of specimen. Not of self-completion but the yearning for the Good, to refer to Plato's Symposium again, is true realization.

Since Spencer's time it has been fashionable to speak of ideal activity as adjustment. It is not always clear what the adjustment is to. It must be to some sort of environment. But what is the environment to which the soul must adjust itself? It is not merely present sense-perception surely. The adjustment must be to the future as well as to the present, *i.e.*, the present ideal attitudes must fit into the future process of life. To hold that the ideal is at each stage of the process a mere function of the *is*, the result of the accidental shooting together of the various tendencies of human nature, and also hold that it controls these tendencies, is even more incredible than the materialistic statement that the ideal is a mere epiphenomenon, irrelevant to the going on of the real process. But the latter bankrupts all truth-seeking and all ideal endeavor. Epiphenomenon is after all only a technical name for a lie. Why should the mechanical process produce something which does not express its real nature, has nothing to do with its existence, an unaccountable illusion?

The most important part of the adjustment of civilized man is to the institutional ideals of the race. These furnish a provisional measuring rod for individual life. But social agreement, while on the whole a safer test than individual desire, is not absolute. Can any thinking man be satisfied in merely obeying the oracle of Delphi, "to worship the gods according to the laws of the land"? Socrates may have meant to do so, but the Athenians were right, that he introduced strange gods, new ideals hostile to their conventions. Every institutional embodiment of the Ought is relative.

Neither can reason furnish an absolute criterion. Sometimes, indeed, the individual is wiser than society. Else there could be no progress. As Heraclitus says: "It is the law, too, that we obey the counsel of one." But individual reason at best is dependent upon its historic setting. It is limited by the axioms of the past, the ideals and sentiments of the age. It very easily finds arguments for the stake or the golden rule, the Inquisition or the French Revolution, according to its setting. An appeal to pure reason cannot lift us above the relativity of history.

Even if there is a more comprehensive reason than human reason; granting that such a reason can know the total object of science, the present constitution of things, with its laws and uniformities, in a real time world such as ours, even such a reason could not read off the future. Its attitudes toward the future would still be postulates; and nothing would seem more certain than the transformation of present meaning. Even such a reason would presuppose direction, beside present omniscience for the validity of its judgments. Its judgments would have to fit into the future as well as the present to be absolutely true. How much more evident must it be that *our* reason does not constitute its own world, present and future! We cannot now be said to mean what we do not mean; and when a richer meaning supplants the poorer and more selfish, that is not because we meant more than we meant or because we wanted failure when we sought success. Paradoxes do not explain. Something must really have happened. And in the Ought process the superficiality of our former insights has come to light. If we learn modesty in regard to truth as we have it, that is not because we know more than we know or possess an absolute truth, but because we have learned from the past that our truth, however satisfying for the time, is provisional. There is a constitution which transcends our purposes whether individual or social. This selects or eliminates in the course of the process.

Our demands and postulates that there ought to be meaning and worth – demands which antedate our scientific constructions and our practical and aesthetic purposes – these are not simply the result of experience, because experience only comes to have meaning and value with reference to them. Provisionally we may regard them as biological categories. They do appear in the evolutionary process. They are involved in race experience and have been forced upon us by race survival. But this only pushes the question back. Why are they conditions of race survival? For we must look at these conditions not only from the point of view of the individual, but of the whole process. They must somehow be involved in the constitution of reality throughout the time process, thus to condition reflection and life alike. They are the manifestations or incarnations in history of the eternal Ought, which is with us always from nebula to society, for even the astronomer and the geologist insist that their facts must have meaning.

Evolution itself must derive its meaning from such a conception of absolute direction. Even such fragmentary cumulation of significance as we find would otherwise be meaningless, for we could have no reason for supposing that the later is any better or truer than the earlier, even on the whole and in the long run, or that the process ought to be read one way rather than the other, unless we assume such a direction. This is the real measure of the process. As regards the pre-rational stages of the process, whether individual or racial, cosmic or human, these would be irrelevant to reason unless they somehow prefigured or were prophetic of reason. That there shall be reason cannot be

an accident, if we can reason about things. When at last man awakes from the long slumber of the ages, pregnant with tendencies which ages of selection have forced upon him independently of his individual will, "he lays his hand on his bosom and feels it is warm with a flame out of heaven" – a yearning for that which is not and yet gives meaning and value to that which is. It is this which makes the time process ever mean more than it knows – not *its* wisdom, but rather that in spite of its blindness it comes to fit into a larger pattern. This makes the present, in so far as it is meaningful, fulfil the past in so far as it was meaningful; and as the checkered woof of the time process emerges out of its instinctive darkness into the future, it furnishes the warp which insures a continuous whole.

This Ought or direction cannot be a product. Reflection cannot create this Ought, this demand for meaning and unity, for it presupposes this very demand. Neither can time create it, for time has no direction, knows no ideal. It can but transmute endlessly that which is, each after its kind. What shall survive, if anything but chaos, must be left to another principle. For "time," as Heraclitus has so strikingly put it, "is a child playing draughts." In the flux of process, individual desire and social institutions, intuition and reflection, prove alike relative. What remains is only the direction. This must be absolute, else there is no meaning. This is the absolute ontological limit of truth and worth, forced upon the individual by the constitution of reality and the necessities of life, not a mere ideal positing.

Without an absolute direction I do not see how validity is possible. Any theory of the universe which distinguishes degrees of truth and worth, which holds that one state of consciousness may be better or truer than another, such a theory implicitly refers to a standard, a measure more comprehensive than each individual's momentary feeling or view point. To deny this is to land in skepticism with the contradictory implication of a standard more absolute than all, unless indeed we carry out our skepticism to the extent of denying the validity of our skepticism and so commit suicide. We may lay it down then that all evaluation, skeptical or believing, implies a standard transcending the immediate moment and valid for all. But the question remains: How must we conceive this standard? I see only two possibilities: We must either assume with the absolute idealist a complete, all-comprehensive, eternal consciousness, or an absolute direction. Of the former we must even now be sharers or possessors. We must move according to its logical necessity; we must unravel its logical categories; in the consciousness of its completeness we realize our finite fragmentariness. This hypothesis has been more fully discussed elsewhere. Suffice it here to say that if the universe is thus complete and perfect, it is difficult to see how this consciousness of fragmentariness or finitude should ever arise. Moreover, as the necessities of our existence call for adjustment to a world in which change and plurality with all their darkness play an

important part, it is difficult to see of what use such a perspicuous hypothesis can be.

If we take the universe, on the other hand, at its face value and acknowledge it for what it is – a stream of processes – then we must seek for another standard. As this standard cannot be comprehended within experience, individual or social; as it cannot be regarded as an accidental product of the process and yet cannot be merely external to the process, we must seek it in the direction of the process. If the process has an absolute direction dictating, not what can arise, but what can survive within the process, then the significance of the process as a whole, reflective or non-reflective, is guaranteed. And while we cannot read off an absolute truth when we do not have it, we have in this a limit, which however much it transcends our finite moments, yet furnishes the possibility of evaluating our finite degrees of truth and worth. The limit as posited by us partakes, indeed, of the finitude of our positing, but the conception of this limit, however it may vary with human experience, becomes effective none the less for our comparison. And on the absolute reality of the limit must depend in the end all validity, however relative, of truth and worth.

It is evident, therefore, that the concept of validity has a real basis only in a world which has absolute direction. If the process of the universe is merely a chance affair, no ideals can be enforced or be binding, whether mechanical or ethical. Science in such a world would have no guarantee for its ideals of simplicity and unity any more than ethics for its ideals of worth. What keeps warm the passion of science for these ideals is that in spite of the complexity of the world, growing ever more apparent in the course of new discoveries, the facts can be more and more sorted under common principles; the Chinese puzzle of a world does seem to indicate that some parts belong together, and the faith in spite of failure ever springs up afresh in the truth seeker's breast that the rest will yield to the same ideals.

Whether the time process has always been conscious of direction is not the question. This, while genetically interesting, has nothing to do with the reality of direction. We have not always been conscious of space and time and other characteristics of reality, but they have none the less conditioned behavior until we acquired the tools for recognizing them. So direction must have operated before the consciousness of it, to give significance to process when we come to reflect; and for that matter to bring about reflection. For why should we raise the question? The problem is, can we express direction or meaning as mere chance or happening on the one hand, or mere habit or uniformity on the other? It seems to me to involve another dimension besides these. Even a mechanical ideal implies the faith in meaning. If there was a time when reality was conscious of no meaning, it must at least have had a definite direction toward reason. The process must shoot into reflection by a law or tendency which reflection in retrospect can see to be inherent in the nature

of the process, and not as a result of mere chance. Otherwise reason loses all validity as well as efficacy, and the mechanical ideal becomes merged with the rest in the general chaos.

If it is the limit of an absolute direction that gives meaning to our finite and fleeting oughts, our relative ideals, must not the limit, then, be as real as the terms it limits? If we take the straight line and the varying curvatures of which it is the limit, the straight line is surely as real as the curves. I am speaking here of reality, not of worth. The straight line and the circle are worth more or are more significant than the multitudinous curves, but that is not the question here. If we grant the reality of our finite purposes, must we not grant also the reality of the limit which conditions their significance, which prevents their being swamped in absolute relativity or brute chance? Must not direction, without which process is unintelligible, be as real as the process? If it is helpful, moreover, to suppose that there is somehow in the universe such an ideal limit which regulates worth and survival; if even the nebula and biological evolution seem to involve such a direction to be intelligible; if when it becomes conscious of itself in man, it can control, and make significant, facts and impulses; if truth itself is more than an accident and we are not deceived that there can be approximation toward a whole of truth, goodness and beauty, then this limit cannot be merely our fiction, but must be involved in the constitution of the process.

I cannot see how the pragmatic movement, led by the brilliant James, can get along with less than this concept of absolute direction. If it believes that process is amenable to purposes and can be guided by purposes, that the test of ideals is their workableness, it must somehow account for the presence and place of purpose in the process. That the process is through and through reflective is a violation of the pragmatic principle itself, for there are surely some facts which we need not and cannot recognize as purposive. We seem, therefore, to be in a dilemma: Either we must accept materialism, that ideals are accidents and have no efficacy in the process; or we must hold with absolute idealism that there is no process, but that the universe is one complete whole, the purpose eternally fulfilled. In the former case truth becomes merely an illusion. In the latter, truth becomes inaccessible and the world as we have it is illusion. The only way we can steer safely between the Scylla of materialism and the Charybdis of static idealism is by keeping before our minds the concept of absolute direction. This makes purposive significance possible without stopping the universe. It also pieces out the ideal beyond our finite purposes instead of making it a mere unaccountable fragment in the process without any setting in the universe as a whole.

The perennial problem of the one and the many finds its only intelligible solution in the assumption of such an absolute direction. The dialetic whether the universe is really one, and the many an illusion – or whether it is really many, and the unity an illusion – has been waged long, though with bloodless

damage to both sides. The atomists of all types, whether believers in the quantitative entities of Democritus or the spiritual monads of Leibnitz or the qualities of Herbart, have found it necessary to account for the apparent continuity and unity as arbitrary and seeming. The monists again, from Parmenides down, have been equally forced to sacrifice the apparent plurality within the world. Brave souls who have had more respect for the facts than for logical consistency have compromised and admitted both the one and the many with varying emphasis according to their peculiar bias. One thing is certain, that on the basis of a static conception of the world, the problem of the one and the many remains as impossible as ever.

Nor is a dynamic conception of the world by itself any more satisfactory. That the universe is process or transformation does not tell us anything about its relative unity or plurality. Process in itself may mean greater chaos as well as greater unity. It furnishes no guarantee one way or the other. It tells us nothing in so far as it is a mere time process about its *whither*. And still we insist that our world shall be a whole and not a mere chaos. This is the eternal inspiration of scientific research as well as of practical life. Yet how ridiculously meager is the evidence for our faith. Kleinpeter tells us that his master, Mach, proceeds inductively as regards this unity, while philosophy proceeds deductively. That is amusing! Have the fair maiden's dreams of love, and her golden hair flying in the breeze, and the Kansas prairie dust-storm all been comprehended within one inductive unity? That they ever will be so is an audacious dream.

We are agreeing now that if there is to be any unity it must be a teleological unity. The dust-storm can only be understood as one with love's fair dream when they can be seen as part of one purpose. Plato felt his way toward such a teleological unity when he crowned his hierarchy of Ideas with the Idea of the Good. But the dynamic cement of process was lacking, and the loose stones would not hold together. If we assume the attribute of an absolute direction, it seems to me we shall have the necessary regulative principle. Granting on the one hand a universe of flux with ever new variations, and on the other an absolute direction, selective or legislative to this flux, in eliminating those transmutions which do not fit its direction – granting this not only as an experiential but as a cosmic principle, and a degree of unity at any one time would be guaranteed and in the long run the successive stages of the process would show cumulative significance, with a backward and a forward reference. Such a universe, too, with its original diversity of stuff to be transformed, with the possibility of ever fresh variations, not precluded by such uniformity as exists in the transmutions – such a universe would also account for the outstanding plurality and opaqueness in any given stage of the process. And as the process, moreover, is as eternal as the direction, the pluralism could not disappear, though perhaps it might grow more articulate and so make disjunctive judgments of the future more possible.

The conception of immortality again can be given real meaning only if we assume the attribute of absolute direction. Mere existence and the tendency to persist *in esse suo* cannot guarantee immortality. The question is not, does an individual desire to persist? Or does he have a specific content? But is he worthy to persist? Is the content significant? In the history of art and institutions, as well as in the history of thought, we learn that only those structures and contents which fit into the future of the process can survive. But if worth is to be a condition of survival, the process must be fundamentally and absolutely selective. It must have absolute direction.

Powerless indeed is this Ought to create its special content It cannot work *in vacuo*. The grist which it shall grind must be furnished by process. This is the result of free acts of willing subjects; or, lower down, of chance variations, the inwardness of which we are ignorant. Nor can the Ought arrest the flux, nor annihilate its space conditions; but within this process it can determine that what shall survive must have worth, the particular richness or coloring of it being due to the process out of which the Ought selects. The universe indeed becomes other for our earnestness or frivolity, our strenuousness or laziness. But this, at least, is true: that what survives must be in line with the direction of the process. The tragedy, moreover, lies not only in willfully missing the good, but in intending the good, and because of ignorance of the complexity of life and of the future, doing the evil; and the well-meaning man having to proclaim in the tragedy he has wrought: "Das ist nicht was ich meinte."

With reference to the stuff aspect of reality, the finite structure, with its content and uniformities, its impulses and meanings, at any one time, the Ought is non-being, *i.e.*, it is not stuff. And yet it can be no less real than being, for it determines its meaning and survival. It cannot work independently of the finite, but in the transmutions of that which is, it asserts its supremacy, for nothing can have meaning, and nothing in the end can be, without it. It determines the survival of stuff and ideals, which, for the time being, belong to the stuff side of things. For our ideals are structures striving to reflect or embody eternally the infinite direction. But their eternity is only intended; it is not real.

The Ought is eternal. Since the Ought is not stuff, mind stuff or any other stuff, it is not subject to time and process. Only stuff is transmutable. Having no content, not being itself stuff, for it determines the survival of the stuff-transmutations, the Ought itself is not subject to transformation. It remains eternal in the flux.

With Heraclitus I would agree that this direction is "the divine which feels all human laws." It is "the common" in the sense that it is valid for all and binding upon all, as opposed to the many who live "as if they had a wisdom of their own." Yet it is not the common in the sense of the identical, either in the many opinions or in the historic process. What is common to the savage

and the civilized man, to the fool and the wise man, would be pretty thin and meaningless. On the contrary, it manifests itself in the concrete process of history, in the real flux which is not merely a rearranging of bits of substance or mathematical models, as the atomists would have it. It is no doubt true that the common, *i.e.*, the institutional heritage of the race is, on the whole, the safest guide of life. Institutionality is the result of workability for the time being. But if the direction were merely the common, history would be a mere dead level without movement or progress. Its flashes of light must come first of all to the individual.

It is the / *δοω*, the path, of process and survival; but not the path in the sense Heraclitus meant it – an upward and downward path, from fire down to water and earth and up again, "fixed measures" being exchanged, a merely circular process in which nothing really happens. Not so with the real time process, where all uniformity or stuff is relative and permanency is merely an ideal limit. In the Protean guises of this process the Ought asserts itself ever and anon. And while it cannot stop the process, it determines what can have meaning and existence in the process. It is not the projection of the ideals of the individual or of the race at any time. Nor do they intentionally point to it. They point to their own realization except as they qualify themselves: Not my will, but the eternal Ought be done; and in so far they are contentless. The pointing or direction lies in the destiny "which shapes our ends, rough-hew them how we will," not fatalistically, but by eliminating those free acts or accidental variations which do not fit its direction. The Ought, like the voice of Socrates, only speaks in the negative. Its content is ever changing and ever new; or rather, it has no content: and yet though non-being, it determines the survival and meaning of that which is. It is the direction of history: and yet for us it is ever born afresh out of the process it determines. It has no concrete being except as it is thus embodied in the fleeting moments. It thus furnishes the direction in the trackless void of the future as it is continually incarnated into the finite. It thus throws the searchlight of truth ahead; and yet at every moment it is a new, because finite, searchlight, with a new color and radiance, always, however, determined by the same Ought.

The Ought is creative, but it creates not by production but by elimination. It is creative as the artist is creative, *i.e.*, by selection. It is superior to "essence," *i.e.*, to truth and beauty, for example, as historic products, because it determines their worth and survival. It gives beauty to the perishing things of earth. It is both the "heavenly pattern" and the artist. It is a real or ontological factor of the world, as Plato held. What Plato failed to see is that the Good can only create in a flux world and has no other content but the flux. Moreover it cannot be an Idea, because then it would be an essence and relative to itself. No wonder Plato feels dazzled and confused. It is transcendent and infinite. We can only grasp it as a limit. But as such it conditions all our thinking and conduct. It is not, moreover, a mere abstraction. It operates in the concrete

world of process. Only thus could it give significance to process. If Plato could only have made use of the conception of struggle and evolution (already dimly outlined by Heraclitus), then the world of flux and the Idea of the Good, could both have been accorded their due reality. He would not have had to confess failure as he does in the Parmenides.

If we cannot give any definite content to the conception of absolute direction; if it remains for us merely the demand for law and worth; if, to use Plato's metaphor, we cannot look upon the sun itself, what is its child, its phenomenal manifestation? What evidence for its existence in the finite, structural world do we have? As we have developed the feeling of extensity with complex instinctive coördinations to meet the reality of space; as we have developed the sense of duration with complex structural adjustments for measuring the flight of time process; as we have developed the feeling of effort to symbolize energy, so we have developed the feeling of Ought, with its tendencies and sentiments, and its sanctions in social institutions, to meet the demands of this fourth attribute of direction. That in the nature of things, just because the process is infinite and our ideals are part of the process, our ideals must be finite, does not invalidate the evidence of the *feeling for ideals* so important for the race. That, moreover, these sentiments and ideals are growing more essential and more adequate to meet the requirements of life must strengthen the faith in their efficacy and objectivity.

It is, indeed, as Kant maintained, the categorical imperative. It commands unconditionally. It does not grow out of our inclinations and impulses, but it determines the worth of these. Its sublimity surpasses the starry heavens, for the whole cosmic process is subject to it. In its consciousness we are mighty and free. We are part of another world to which the stuff world is subject. It is not the good will, but it determines whether wills are good or not. But just because it is an absolute limit; because all our finite ideals are relative to it; because it is the *rationale* of history and not its product, therefore no specific content can be given to it. The maxim of universality and all other maxims are but relative to it. We can only characterize it in the most general terms, and those, too, are finite. It means orderliness and comprehensiveness in the regulation of individual as well as social life. In Professor Palmer's apt phrase, "It is the law that there shall be law."

Perhaps that is the safest determination we can give, in terms of reason, of that which transcends and determines reason. Its concrete content must come in every age from its finite setting in human institutional life and in the individual soul. Thus we are able to meet our concrete duties in our generation.

The ideal must become concrete, as Kant saw, by being realized in a kingdom of ends. This is not so simple as Kant thought. For Kant every individual is a little god or absolute, legislating for all men and the universe at large. But on the one hand the individual historic will is not autonomous,

it must accommodate itself to the institutional life of the race; and the two may clash. Human beings, even when they think themselves most rational, do not legislate in the same way, and life must proceed by compromises. On the other hand, the institutional heritage is not final. The individual may be wiser than the institution. But both are subject to the eternal Ought; this alone is an absolute categorical imperative.

Like the First Mover of Aristotle, the Ought does nothing. It only remains itself. It does not itself move. It is not the cause of movement, however, but it determines by its existence the direction and worth of the historic process, and thus accounts for progress. Unlike Aristotle's God, too, it is not only transcendent but ever incarnated afresh into the finite, *i.e.*, it is the meaning we discover in the finite, but more besides. Else the finite would have no significance. Only thus could the yearning in the finite for the complete and whole originate. In being thus incarnated ever anew into human lives and the order of history, it can say with the Christ, "Lo, I am with you always, even unto the end of the world." It is the Spirit of Truth which guides and shall guide us in all truth.

This conception agrees with the Thomistic as against the Scotist position, *viz.*: that God himself is determined by the norms of goodness and truth, *i.e.*, by the Ought, rather than that these norms are the arbitrary result of God's willing. God on this theory would become the concrete, finite and individual embodiment of the Ought. In this lies his power as well as his goodness. But more of that elsewhere.

With Hegel I would agree that history has cumulative meaning. This holds, however, in the long run, and not always in the sense of logical continuity. History is a real process, not merely a system of logic, a scaffolding of categories. It cannot, therefore, simply be read off by logical implication. History is real happening with real tragedy and real success. It might have a different content and thus must be studied empirically. What the Ought determines is that what survives must have worth.

With Fichte I would agree that the universe has a transcendental constitution. But this constitution is not merely a transcendental system of knowledge, a *Wissenschaftslehre*, not even Fichte's, which he thinks our free wills reject to their own damnation. The universe is not so much an ethical system as an ethical process. That which is "over-individual," to use Münsterberg's picturesque term, is the direction of this process; and we are not merely view points within a system, but real actors determining the content and so the character of the world. It makes a difference how we will or fail to will to what the ethical process can realize.

The ethical process cannot be like the Buddhist Karma, for if life is simply the causal result of what precedes, there can be no attainment of an ideal; there can be neither good nor bad, but simply the automatic record of the cumulative result. Life must remain imprisoned in the iron grasp of the past.

No, causality itself must be relative. There must be some fluency in the process. But most of all, the criterion must not be simply a product of the past, but an independent variable in order that it may pass upon causality and flux alike. The Karma permits of no salvation; no waking up from the evil nightmare. The horrible dream must go on.

The faith in an absolute direction furnishes a sufficient guarantee for our ideal striving. This is not a mere Utopian or *laissez faire* optimism. There is real evil in the world, real maladjustments, false view points. But though the wicked flourish like a green bay tree, their type shall not prevail. The servant of Jehovah shall eventually triumph, though perhaps through labor and suffering. The righteous remnant shall survive and inherit the kingdom. Only the just state can maintain itself. And because the mills of the gods grind exceeding fine, though perhaps slowly, we can afford to be tolerant and to wait. "Let the tares grow with the wheat until the harvest." And the harvest is the sifting of the progressive process itself. In view of our ignorance of the future, our motto, just as far as decent living together permits, should be: Judge not. Let it be. The divine direction of history will see to it, in the struggle of ideals, that the superficial and ephemeral are eliminated. Thus man can labor and wait with confidence as regards the final outcome. And if he is made of the right kind of stuff he will be willing to have his ideals, yea, even himself, eliminated if unworthy to survive. In this willingness, at least, he will prove his superiority to chance.

Will the kingdom not of this world and the kingdom of this world ever be one; will stuff and Ought, the traveler and the path, ever blend into one unity? Will the third kingdom, prophesied by Ibsen in his "Emperor and Galilean," the kingdom of God-Caesar or Caesar-God, ever come? Not while the world is process. So long as there are transformations, so long must the mills of the gods grind, and so long will the content and meaning of the world be ever new. No, to make circumstance plastic in the service of the Ought is the task and the joy, too, of life, at least of healthy life. The real other, the completer life, is not an absolute system of truth which we now possess and intentionally hide for the purposes of the game, as the most illuminating present advocate of absolute idealism, Professor Royce, seems to hold; but the yet unborn, the insight we have not seen. Any theory which ignores this must make history and duty a mere farce. The universe is process, but through the process the Ought sets the conditions of survival and meaning.

There will always be tired souls, who want rest above all other things; but this must be a rest which the world cannot give, a rest in seeking and realizing the ideal. The satisfaction we *now* seek may itself in a further stage of the process be seen to be relative and unworthy. To stop at that would be lazy, cowardly and immoral. The real satisfaction lies ever beyond in the Ought. Art tries to steal from the fleeting moments of life their meaning or significance and frame it, and it rests us for a moment. But this satisfaction, too, is

relative. The songs of our childhood satisfy our soul no more. The satisfaction of the Greek world is not our satisfaction.

The only way, finally, which I can serve the eternal Ought is by serving for the time being the Ought incarnated in my meaning and in human history. To quote Heraclitus again, "It is not meet to act and speak like men asleep." Whether we are awake or asleep, whether we think or dream away life, we are subject to the law of change, and the law of direction. But if we think, we may enter into the eternal in some degree by striving to understand the direction of things and guiding our lives accordingly; we may become creators instead of mere bubbles on the stream. By acting out my best purposes, by living my highest insight, there shall come, perhaps through failure, perhaps through partial success, how, I do not know, new insight, new capacity for work, love, and appreciation. The eternal Ought will see to it, if we are sincere, that we do not permanently miss the path in the trackless unknown. But our illumination must be the Ought as now incarnated in human history. The next incarnation will come in the fullness of time. The voice out of the dark is enough for the next step.

THE POSTULATES OF TRUTH

John Elof Boodin. "The Postulates of Truth." *Truth and Reality: An Introduction to the Theory of Knowledge* (New York: Macmillan, 1911), chap. 7, pp. 123–145.

The pragmatic movement has emphasized practically altogether the *function* of truth in relation to life as a whole. The function of truth is to regulate conduct; and truth, therefore, is valid when it flows into its anticipated consequences. These consequences are further experiences. Epistemologically truth rests on experience; and experience, as one moment of individual consciousness, rests on more experience, the present moment becoming confluent with the new moments in the ever expanding restless stream. The flow of this stream has its direction determined by the past and present tendencies, but it also has its own individuality, as the old elements flow into the new situations, whether chemical or psychological.

What should be made clear, however, is that pragmatism is a theory of the function of truth, and does not deal with the whole problem. By emphasizing this we may be able to attract attention to the far larger and more complicated problem of the form of truth. To be sure, even in dealing with the problem of function, pragmatism has been inclined to limit itself to the biological function of truth – truth as a factor in the adjustment to the perceptual environment, or a tool for dealing with perceptual situations. Pragmatism has been inclined to neglect the sporting interest in truth – truth as setting its own problems, choosing its own constitution, and thus elaborating its logical consequences to harmonize with its posited world. But this, while it alters our conception of the scope of truth, does not fundamentally alter our conception of its function, which still remains to regulate conduct – the conduct of the understanding as well as the adaptation to a perceptual environment.

But granting that thought comes to light in the stress and strain of experience – whether forced upon us by the environment or posited as the logical play-ground of the will – there remains the problem of the nature of thought itself. Is the form of thought originated by the practical situation – the consciousness of difficulty or disorganization out of which it arises? In the case of generating electricity by friction, say by two sticks of wood, we are setting free a preëxistent energy, the nature of which we must respect; and the friction simply furnishes a condition for its manifestation. Is it so with thought? Or is thought created outright by doubt? Does it really grow out of

the infra-logical antecedents? In that case, is the form, too – the laws of thought – created? Are they set by the will as its temporal conventions, or must they be acknowledged by the will as eternal? In the former case, are they just what the *individual* posits them as being, or are they universal? But, if without conventional agreement we find ourselves acknowledging these laws whenever we think, they would seem to be independent of the will and have a preexistent character. In Plato's terminology, they would seem to be "recollected" rather than created in our coming to consciousness of them. The laws of thought would seem to be *discovered* through their use in experience, rather than *made*.

If we look forward to the end of thought, instead of backward to its origin, is thought simply a tool to an alogical end? Or does thought enter into the end of life as an intrinsic factor – not as a scaffolding merely for a higher stage of mystic immediacy or biological activity, but as the law of the process of life? What relation does thought, with its postulate, bear to life as a whole? Such, and many other questions, still remain, after we have agreed upon the regulative function of thought in experience. To ignore the structural aspect of thought means a very invertebrate theory of knowledge.

One thing is certain, that the teleological value of thought cannot be understood apart from its correctness, its technique. The syllogism, with its rules, is a valuable machine for abstracting and investigating valid thought relations, in spite of the contumely heaped upon it. What is true of the syllogism, as a device for ascertaining formal relations, is true likewise of the so-called inductive canons for ascertaining causal relations amongst facts. The practicality of our thinking about perceptual situations lies in its being correct thinking, and Mill's canons are an important device for such procedure. If it is true that the procedure explains the value of the device, it is also true that the procedure is made possible by its being a correct device.

Are these rules arbitrary? The rules of athletics are not arbitrary, though they may seem so to the spectator. They are the result of studying the laws governing both the constitution of the players and the appreciation of the spectators, so as to produce, on the whole, the best result for player and spectator alike. The conditions governing the game may be said to preëxist in human nature and to be binding if you choose to play the game and to play it effectively. So with the laws of thought. The question, then, arises: What are those laws of thought which in all our reflective procedure we must respect? And what is the basis of their authority? To begin with the first question: What postulates are implied in all thinking and condition its procedure?

I shall try to show that there are four presuppositions or laws which are implied in all our knowing, viz.: the law of consistency; the law of totality; the subject-object form, or the law that knowledge must be representative; and the law of finitude. The use of these terms will become clear, I trust, in the discussion.

1. The Law of Consistency

First of all it will be generally agreed that we presuppose consistency. Under the law of consistency I include what are usually termed two laws – the law of identity and the law of contradiction. It requires no proof to show that these are merely different emphases of the same meaning. If we use the old formula, *A* is *A*, to symbolize the so-called law of identity, the law of contradiction simply brings out the implication that if *A* must be taken as *A*, if black must be taken as black and Socrates as Socrates, throughout the logical procedure, *A* cannot also be taken in the same sense as not-*A*. This is true, but it is an implication rather than an independent law. Fortunately, the concept of consistency comprises both of these implications, viz.: that for purposes of thought we must be able to take *A* as *A*, and that if we must thus take it, we cannot take it as not-*A*.

But the term consistency has a further advantage. It not only comprehends both of the old formulas, but it also brings out what they failed to do, namely, that it is identity within a variety of individuals and changes with which we are concerned. Truth would be meaningless within an abstract world in which *A* is bare *A*. It is the constancy of *A*, as making possible description and prediction, that makes truth mean something. The law of consistency means that in the variety of experienced facts and changes, there must be a certain constancy of content, if we are to make any predicates about our world. Unless we can take our abstract meanings, qualities, relations, or whatever we may be actively interested in, as the same, in spite of flux, we can make no judgments or inferences. This means, formally expressed, that we must take *A* as *A* throughout our logical procedure, and that we cannot take *A* as not-*A*, if we would reason about the meanings or things of our experience. This implies that, for logical purposes at least, there are such recognizable identities as furnish leadings or threads to the plurality and flux of experience.

Identity in the variety of situations, empirical or formal, must always be taken as identity for a purpose, in order to be concerned with truth. Mere repetition *per se* would have no significance for truth. Animals, too, have to adjust themselves to a world of uniformities; and they develop instincts and habits, but no truth. It must be identity as leading to identification; and this means that the situations may, in other respects, be quite diverse. In fact, here lies the significance of the identification – in taking the somehow different as identical for the purpose. 4 = 2 + 2 for the purpose. The Jones of to-day, however outwardly changed from the Jones of your school-days, is still the same in fundamental characteristics, and merits the same loyalty and friendship.

We can see that nominalism, in the bald sense of absolute disparateness, would make truth impossible. In such a world there could be no concepts and no inference, as each particular content must be taken as unique. Nor is it

necessary to go to the opposite extreme, and speak of universals or identities as existing prior to the instances, and these as differentiations of this identity, as even Bosanquet does. This makes knowledge quite as impossible as does pure nominalism, for it is absurd to suppose that from identity any instances could be differentiated. It is enough for truth that certain characteristics can be taken as the same in various individuals or groups, and that this makes it possible to say something about the conduct of these individuals or groups so far as these characteristics are concerned.

Nor is a purely dynamic nominalism any more possible. To be sure, truth deals with a world of change. But change need not be chance or absolute discontinuity of process. In so far as such is the case, truth of course is impossible. Change may be circular, or practically so; and it is a world with a certain uniformity of characteristics, however much it may change, with which truth must deal. It is only in so far as our world of experience can be taken as constant, that we can have science, though of course such a statement would be meaningless if we did not deal with a world of change.

The law of consistency always has to do with meanings. The meanings may be abstract or hypothetical merely, and our interest may be in their formal relations. Or the meanings may refer to qualities and relations in concrete experience, and so may be concerned with existence. But in any case the law of consistency refers to the identity of meaning, and holds that, from an identical content, identical consequences must follow; so that if certain consequences follow from *M* in the case of *P*, the same consequences must follow from *M* the case of *S*.

The law of consistency applied to the concrete meanings of experience – qualities, relations, or whatever they may be – means that you cannot take the same *fact* as *A* and not-*A*. A thing cannot be taken as having the quality of *A* and the quality of not-*A*, white and not-white, in the same respect. It does not deal with the question whether a thing *can have* the quality *A* and not-*A* in the same respect. The law of identity is forced upon us irrespective of the object, though inasmuch as reality is for us what it must be taken as, in the procedure of experience, we naturally extend the law of our thinking to things as well. In this there can be no harm, if we know what we are doing and are not postulating some occult harmony to cover up our previous dualism of thought and things, created by our own assumptions. One thing is certain, the world of experienced things is to some extent describable, and so must have some degree of identity.

That *A* is not not-*A*, that sour is not sweet or any other quality within the universe of taste, involves no contradiction. They can still hang together within one system. In fact there can be no system, if there is not difference. Being and not-being, as pure abstractions, do not imply each other. They are exclusive. But as pure abstractions they are also indistinguishable. They can have meaning only within a context. And when we really develop their

meaning, instead of bandying terms, we find that they hang together by their edges – that we cannot define one without implying the other within a system of meaning which posits them as aspects of itself. Bradley would argue that, since *A* cannot possibly be not-*A*, therefore they cannot be related in any manner. For suppose they were like in any way. Then in so far they must be identical or partake of a common term. This leads to an infinite regress. But what is this but playing with terms? Of course, if *A* and not-*A* be made exclusive by definition, they cannot belong together. But that does not prevent our actual *A* and *B*, as experienced, from belonging together within a system, though perhaps not always one of logical implication, as Hegel thought. Experience is not chopped up with a hatchet, not made up of isolated abstractions. As immediate, the qualities of experience are unique. But as immediate they are neither here nor there, neither this nor that, neither more nor less – not truth. It is because these facts are capable of being sorted into series and classes, on the basis of degree or kind, that we have science. And this distinguishing of degrees or kinds, identities or differences in the world of individual facts, does not seem to disrupt. It contradicts neither their existential nor their appreciative unity.

Two aspects are involved in the concept of consistency, as I am using it: First, that terms must have an identical meaning, must be taken as the same throughout the argument. Otherwise we shall not be talking about the same thing, and so shall be guilty of the fallacy of four terms. This use of the term consistency is closely bound up with the other aspect: namely, that from identical characteristics follow identical consequences, whether we deal with relations or qualities, or whatever the selected content may be, and whether the individual facts be the same, or we be dealing with new groups of facts. A case of this would be Euclid's postulate: "Things equal to the same thing are equal to each other." Stated in a more generic form: If any individuals or groups of individuals are identical in some respect, they can be exchanged so far as that characteristic is concerned. This is equally involved in deductive and inductive inferences. What we must be careful about in each case is to isolate or distribute the identity, to see not merely that there is identity in the situations dealt with, but that it is significant or relevant identity – identity in the same respect, *i.e.*, that it pertains to the consequences which we try to deduce. This is reduced to a technique in the syllogism by rules such as, the middle term must be distributed at least once, no term must be distributed in the conclusion which is not distributed in the premises, there must not be more than three terms, and both premises cannot be particular or negative. As regards causal relations the technique of discovering this identity has been systematized in Mill's canons, the ideal of which is the method of difference, which means precisely a distributed identity. We thus proceed to sort our facts into classes and series with determinate characteristics and predictability. The success may be varied, and even with cumulative coöperation and special-

ization, must necessarily be slow, considering the complexity of our world. Sometimes the result of scientific investigation is simplification of hypothesis, as in reducing magnetism and light to electricity. Again, new and unforeseen data come to our ken, necessitating fresh assorting, as in the recent discovery of the radioactive elements. But the progress of science, physical and psychological, is evidence to how great an extent the world of our experience lends itself to conceptual manipulation.

A great deal has been said justly against substituting mere analogy for proof, as the human mind in its laziness so often does. This must not blind us to the fact, however, that we must proceed by analogy – the seeming identity in the new set of facts with situations that we have tabulated and learned to meet in past experience. Newton's theory of gravitation, Darwin's theory of the origin of species, are splendid instances of framing hypotheses on the basis of analogy and with successful outcome. We must be careful, however, to make certain, by observation and experiment, that the likeness is *relevant* likeness – that the consequences which we try to predict follow from the identical characters which we have selected. Two men may be identical in being tall or black or Italian, but it does not follow that you can predict from one to the other as regards reliability, though that is the way we often implicitly proceed.

As the law of consistency means that an object of experience must be taken as the same (quality or relation) in the same respect; or, expressing it negatively, that an object cannot have different predicates in the same respect. This will be seen to include what Lotze has called "the disjunctive law of thought," a species of which, in the case of only two alternatives, would be the so-called law of excluded middle. To use a concrete instance: A rose *a priori* may be qualified by any one of a number of colors, but as a matter of fact it can be taken only as having one color in the same respect. And if it possesses one, for example, red, it cannot possess any of the other colors at that point. Whether you artificially dichotomize your universe of color as red and not-red for the purpose, or state the actual disjunction of alternatives possible, the result is the same. An object cannot both be taken as having a quality and as having a different quality in the same respect. The "disjunctive law" is hardly even a corollary. It is rather the explicit statement of the law of consistency, as previously used.

If the traditional laws must be regarded as different emphases at most of the same principle, they have their meaning, nevertheless, as psychological stages in making explicit the law of consistency. From this point of view the consciousness that *A* must be taken as *A*, in a universe of discourse, is less distinct than the consciousness that *A* cannot be taken as not-*A*. But the full significance of the law of consistency is expressed in the "disjunctive law," viz., that our universe of discourse must be capable of such disjunction that *A* can be distinguished from *B* and every other possible predicate in the same

respect – only one of which can be taken as qualifying the subject and thus be predicated in distinction from the rest.

As corollaries or implications of the law of consistency, we would have the axiom that what can be predicated, whether affirmed or denied, of a kind can also be predicated of that kind's kind, which is so vital in all our deductive procedure. And also that what is true of one group of facts is true of another group, if the practical consequences follow from characteristics which the groups have in common. And thus we can extend our knowledge by analogy to new cases and test its application there.

2. The Law of Totality

But though we are able thus to establish kinds or systems of fact, with their definite connections and predictability *in suo genere*, the question still remains whether these systems cohere into a whole, hang together as kinds, or whether perhaps our world is made up of disparate or parallel systems, whether two or infinite in number. Now to be knowable it will be seen that somehow the ,various systems must hang together at least with our cognitive purposes. We must have systematic connection in the large (*in dem Grossen*), as well as unique determination within the one kind of series (*in dem Kleinen*). Taking number as one illustration, not only must the various series, finite and trans-finite, be self-consistent, but we also demand that they shall form a complete whole. Now this postulate of systematic connection in the large, I would call the law of totality.

This is broader than Leibniz's law of sufficient reason: Nothing happens without a reason why it should be so rather than otherwise. The law of totality does not emphasize teleological connection as over against causal, as has generally been the use of the law of sufficient reason. It merely emphasizes that facts do not exist as isolated individuals or isolated groups in our experience, but belong with other facts; that reality, as we know it, hangs together by its edges, so that we can pass from one fact to another, either directly or by intermediaries; and that only so can we know it. It does not mean that every fact makes a difference to every other; that our fancies alter our gravitational relations to the Milky Way. This would be impossible to show. On the contrary, we know that some facts seem to make no direct difference to a given group of other facts; and some make a certain kind of difference only under certain conditions of intensity or complexity. It makes no difference to a color in what part of a space or time series it is located, whether perceived yesterday or to-day, here or in China, given the same concrete setting. But the number of vibrations per second do make a difference. Even here, however, on account of the structural conditions, a certain intensity of vibration is required to perceive light at all, and a certain number of vibrations per second must be added to perceive another kind of

light. Experience, as we can take account of it, does not proceed by infinitesimal transitions, but by finite drops or bucket fulls. The law means that facts possess such uniformities or similarities that we can pass from one to another, under determinate conditions, if not immediately, through a series of intermediaries. If my thought does not directly affect other bodies in space, it may do so indirectly through the difference it makes to my own body. But, by some edges, some common attribute, all the parts of our world hang together. Mind must make a difference, under determinate conditions, to mind, and body to body, and mind to body and body to mind, in so far as they are parts of our experience and known by our experience.

The constitution of the human mind makes the causal category a pervasive one. To know our world means that its various objects can make a difference either directly or indirectly to our minds. This, in the case of the physical world, means a causal difference. To speak of physical changes as parallel to thought would mean that the mind can take account of objective existences that make no difference to it, which is absurd. That our ideally posited world of objects makes a difference to our purposes requires no elucidation. Thus widely interpreted, the law of totality means that the world with which knowledge is concerned cannot exist in compartments. It is a command to look for connection. In a certain sense it may be taken as equivalent to Spinoza's conception of substance, without assuming *a priori* that "the order and connection of ideas is the same as the order and connection of things." We have to do here only with things as experienced. We might, however, agree to Spinoza's axiom that "things which have nothing in common cannot be understood, the one by means of the other; the conception of one does not involve the conception of the other" – meaning by "in common" merely that the things must be capable of making a difference to each other under certain conditions, and especially, directly or indirectly, to our cognitive purposes. We cannot know universes split off from our own, if such were existentially possible.

In spite, however, of Spinoza's insistence upon the unity of the one substance, he left us two disparate parallel systems which can make no difference to each other, have no common attribute – the world of thought and the world of extension. Our concern here is not with the metaphysical possibility of such a conception. But for epistemological purposes, we must assume not merely that the universe can be sorted into kinds, but that these kinds somehow hang together, that one part of our experience coheres with another part, either directly or by means of intermediaries. Only in such a world would social objects be possible. Facts thus have not merely a unique determination within their own special system, but have a universal reference, cohering as a whole. And this is what I mean by the law of totality.

And how do they cohere? I can conceive of only two ways: either as cause and effect, or as means within a purpose, logical, ethical, or esthetic. And it

is not necessary for epistemological purposes, whether it is for metaphysical or not, to reduce these to one. It is not enough that facts are together in one space and one time. They might be thus together and yet exist in compartments. Space and time do not unify. On the contrary the same presupposition of totality applies to our space and time systems. We assume the unity of space on the basis of the law of totality, *i.e.*, because we believe that our universe of facts, spread out in space, hangs together. And so with the unity of our social time construction or history. Empirically we do come upon functionally dissociated time series in experience, as in automatic writing and trance, but they are cognitive realities only when connection is established for some subject. Facts must run into each other some way, causally or teleologically, to make the unity required for cognitive purposes. And as all teleological unities are also psychological events, therefore all facts must in the last analysis be causally conceived, according to some definite relationship, as objects of knowledge.

Nor does the law of totality mean merely that the facts of experience are a collection of such a kind that we can use connective symbols as *and* or *with* or *on*, etc.; not merely that we are conscious of the facts together, which we are only to a small extent, but that facts make a difference to some other facts, become confluent with some other parts of experience, in a systematic way. If knowable, they are not merely lumped as *ands* and *withs*, but strung with identities which we can disentangle either causally or teleologically. This we postulate at the very outset of logical investigation. Only in this way are consequences predictable, formally or materially. Whether the laws of thought are coërcive over things or not, they hold for our experience of things, actual and possible. And that is all that is logically important. The form of experience at any rate is predetermined.

Because we must assume that facts, in order to be known, must be capable of making a difference to other facts and so, either mediately or immediately, to our powers of knowing, it does not follow that we must assume that facts, in advance of being known, must be strung on the unity of thought. Facts in order to become *known* must be strung upon our hypotheses, become a part of our purposes, but that does not prove that they can only *exist* as thus strung. It is through such stringing that facts come to have their *significance* for our human experience, but that does not prove that they then begin to *exist* or that thus they must exist in a larger mind. Facts satisfy the law of totality when they are capable of making some difference to our purposes under definable conditions. This is quite different from holding that, because we can string things on our unity of apperception, therefore they must already be part of a transcendental unity of thought.

3. The Law of Duality, or the Presupposition of the Subject-object Relation

This is involved in all thinking; and the attempt to state the subject as object or vice versa, for thought purposes, gives rise to a paradoxical infinite which is not a progress toward a limit, but which simply means that you cannot transcend the subject-object relation while you remain within the concept of thought. This paradoxical answer resembles the one you get in number when you ask what number is less than the least conceivable fraction. To which the answer is: zero, which is not a number at all, and so beyond the series of fractions, The difference is that the conception of an infinite series in the case of number has a warrant in the progress toward a limit, which is not the case in the subject-object relation. Here nothing is gained by the repetition, once you have grasped the law that in every judgment, including the reflection upon itself, the subject-object relation is involved. You do not get a thought, at infinity, which is neither subject nor object.

A good deal has been said about the self-representative character of thought and its supposedly implied infinite. Now, it is quite true that the proposition, no subject without an object, as a law of thought, must be self-applicable, *i.e.*, the judgment, as regards the subject-object relation of thought, itself involves the sub-object relation. Like all true presuppositions of thought, the subject-object presupposition is circular, Thought activity always means the discovery of the relation of a selected content to a system; and to this the reflection upon the subject-object character is no exception. We simply become conscious of the fact that the self-representative judgment is an instance of the universally representative character of thought and differs in no wise, so far as the application of this law is concerned, from any other judgment.

Now, thanks to language, this representative statement, whether self-representative or other-representative, can be repeated upon itself to infinity. And this, no doubt, has its own value as a logical sport, whether in the philosophy of number or in other speculations; but it does not in anywise clarify the nature of thought. For purposes of epistemology, the self-representative character of thought simply means that the subject-object relation as a presupposition of thought is self-applicable. It certainly does not prove that truth is an infinite series.

Neither does the universality of the subject-object relation in all our *thinking* prove that it must hold universally for *existence*; that because we cannot *think* an object without a subject, therefore all thinkable *reality* must be involved in the circle of this subject-object relation, ergo: all reality must be a spiritual or reflective unity. This has been a favorite argument for idealism and is certainly a short cut. But is it valid? We must remember that the subject-object presupposition only holds for our *thinking* of reality. It

can only be a presupposition therefore for reality which thinks. Our reflecting upon the stone does not necessarily make the stone reflective, and so does not necessarily sweep the real stone within the subject-object circle of our thought, in the sense of its existence being conditioned by its being known. What parts of reality think and what do not think must be decided upon evidence, and not by any *a priori* epistemological presuppositions. All we can show is that these must hold for *thinking beings*, that they are presupposed in our thinking, and that our denial of them affirms them. But we cannot show *a priori* what beings *are* thinking beings or that the universe as a whole is a thinking animal.

The relation of the referent to the referatum, of subject and object, in the judgment relation of the living thought process is different from the reference within a logical context, taken as abstracted from the real subject. This has often been lost sight of in the definition of the judgment. The meaning of the proposition, however complex its internal organization may be, only figures as a judgment, when it is taken up into the active thought context at the time. This active context of interest is the real subject or referent; the proposition or ready-made judgment, as taken account of in formal logic, is in this relation the referatum. Not the proposition as interpreted by the cognitive moment, but the proposition as the vehicle of the active meaning at the time, is the symbol of the judgment. The cold-storage proposition *was* a judgment, but is now merely an object of thought, comparable to any other object, such as gravitational relations in space.

4. The Law of Finitude

So far from thought being infinite in character, I shall try to show that thought or truth must always be finite. We have seen that thought is in nature relational; that it universally means the active selecting and assimilating of a datum by an apperceptive system which does the selecting and relating. Now both the content selected and the system within which it is to be related or defined must be finite in character. We must generalize from certain clear and distinct finite characteristics. I will use geometry, a purely formal science, to make my point clear. I quote from Russell regarding the determination of points and their relations: "Any two points determine a unique figure, called a straight line, and three in general determine a figure, the plane. Any four determine a corresponding figure of three dimensions and for aught that appears to the contrary the same may be true of any number of points. But this process comes to an end, sooner or later, with some number of points which determine the whole of space. For if this were not the case, no number of relations of a point to a collection of given points could ever determine its relation to fresh points, and geometry would be impossible."[1] And again in speaking of dimensions:

[1] "Foundations of Geometry," p. 132.

"The number of relations required must be finite, since an infinite number of dimensions would be practically impossible to determine."[2]

This law of finitude has been generalized for the whole field of mathematical science by so great a mathematician as D. Hilbert: "When we are engaged in investigating the foundations of a science, we must set up a system of axioms, which contains an exact and complete description of the relations subsisting between the elementary ideas of that science. The axioms so set up are at the same time the definitions of those elementary ideas; and no statement within the realm of the science whose foundation we are testing is held to be correct, unless it can be deduced from those axioms by a finite number of logical steps."[3]

That we always base our concepts or laws upon the examination of finite facts and their finite relations was definitely recognized by Aristotle: "If the kinds of causes had been infinite in number, then also knowledge would have been impossible; for we think we know, only when we have ascertained all the causes, but that which is infinite by addition cannot be gone through in finite time."[4] And in the same connection he shows that even if there existed an infinite, the concept of the infinite could not be infinite. For the same reason both Plato and Aristotle recognized that there could be no truth of absolute flux or absolute chance. It is only flux that repeats itself under describable conditions, variety with finite characteristics, that can be reduced to science.

To be sure the law may repeat itself in an endless number of instances; there may be no last term in the series. Such series abound in mathematics. But, in such cases, it is not the potential infinity of the steps which constitutes knowledge. Clearly, a generalization from enumeration would be a contradiction, if we assume infinite instances. The concept of the series is based upon the fact that the steps repeat themselves according to certain finite characteristics or laws. It is this, the identical or universal element, with which truth is concerned, not with the repetition. In fact, once the law of the series has been discovered, the repetition becomes useless. You can then take the series as completed. There would be no virtue in repeating the series, 1 + ? + ?, etc., after discovering its limiting term or its sum, whichever you may be interested in. An infinite number is contradictory, because $n + 1$ is the nature of number. This law is based upon the number process as actually observed. The unpredictable character of number, outside of its general law, is well known, because in each case we must proceed by induction from individual instances and observe their relations.

[2] *Ibid*., p 161.

[3] Translation by Dr. Mary Winston Newson in the *Bulletin of the American Mathematical Society*, July, 1902.

[4] End of Ch. II, Bk. II, "Metaphysics," translation by Ross.

The infinite, in the case of thought, arises from not recognizing the presuppositions of thought; for example, subject and object. The infinite reflective series does not solve the problem. It can only bring the presupposition involved to light. The infinite cannot then be regarded as of the nature of thought. It is merely a result of reflecting upon the nature of a reflective system. It is posited by thought as its logical sport. It has nothing to do with the laws or validity of thought. It shows that thought is dependent upon the larger will which sets the game. Knowing knowledge does not mean that we must know in advance of knowledge, but that we must analyze the presuppositions of knowledge. It is the circular character of the presuppositions of truth, looked at as abstract truth, that gives rise to the apparent infinity of truth. But the infinity is only apparent. That the law of identity or any other *a priori* postulate is epistemologically circular is as clear at the outset as it would be after endless repetitions. We need only become conscious of its *a priori* character as a presupposition of truth. To be sure, it applies to itself as a proposition and to the reflection upon this application, etc., but nothing is gained by such a repetition. It is a disease of language.

The infinity of Plato's Parmenides and of Bradley is a paradox created by definition – by taking thought as abstractions, mutually exclusive, and then attempting to bring them together. In the infinite of the Parmenides, for example, you have no true limit, though there is no end to the series. If terms are like, they must partake of or belong to the idea of absolute likeness; but in this case the term must be like the idea and the idea like the term; and this likeness must be due to their partaking in an idea of likeness and so on to infinity. Otherness would do as well as likeness. In fact any relation, taken as an abstraction, will illustrate how contradictory it becomes. Thus the one shows itself other than the other, etc. In Bradley, you have a similar infinite as regards qualities and relations. Here, too, there is no limit or progress in the series. If you start with disparate, independent qualities, then any relation which tries to relate them must have something in common with each of the terms; in that case it disrupts and must in turn be related, etc., *ad infinitum*.[5] But the infinite repetition offers no solution. It simply shows that such a definition of qualities makes relations impossible, which ought to be clear at the outset.

In order to apply the conception of the infinite to knowledge in a significant way, it is necessary not only to show that, so far as knowledge is concerned, the dualism of subject and object, of system and datum, is insuperable and, therefore, that no finite steps can solve it, but it is necessary to show that there is progress toward a limit and what this limit is. Now, in knowledge, the datum to be organized may be considered as capable of greater and greater systematization, and thus growing smaller as outstanding raw material. But

[5] For a recent statement of Mr. Bradley's position, see *Mind*, October, 1909, pp. 494 ff.

this does not prove that knowledge is infinite. Further, it is true that the limit of the thought process, its *rationale*, cannot be reached on the level of thought, for though all other data were organized, all other problems solved – set by the nature of the content or by the free play of thought – when the last surd has yielded up its enigma to the progressive system of knowledge, there remains the problem of thought itself. Thought makes itself the pure content of its own reflections. And here it discovers a limit beyond itself. For thought cannot answer the question: 'why thought?' Or why does thought have this constitution and no other? Why this search for wholeness? Or stating it in relational terms: Granting that we may be able to weave our relations into ever larger and more comprehensive relations, the minor classes into still larger classes, how can we define a system of relations which is not in turn relative to a larger system, a class which is not itself a class? Here you come upon a limit of the process, which like the number zero or the zero of quantity lies outside the process itself, viz., in the purposive will which chooses to realize itself in this way, chooses this form of activity – the will to think. But there is nothing to show that this zero lies at infinity. It is rather the purpose within which thought moves, the end for which it exists. Thought has reached the Canaan of its progress. But, like Moses of old, it cannot enter. This is the land of faith.

WHAT PRAGMATISM IS AND IS NOT

John Elof Boodin. "What Pragmatism Is and Is Not." *Truth and Reality: An Introduction to the Theory of Knowledge* (New York: Macmillan, 1911), chap. 10, pp. 186–199.

The confusion in regard to pragmatism by its critics on the one hand and the variety of doctrines included under that term by its defenders on the other hand, make it highly desirable for all concerned that there should be a definite understanding as to what pragmatism means. Failing such an understanding, the term pragmatism should be dropped out of the vocabulary of philosophy. This would be a pity, as the term short-hands a good deal of circumlocution and has already been widely used. What place pragmatism shall ultimately come to have as regards various schools of epistemology or metaphysics, whether the old labels of idealist and realist, spiritualist and materialist, empiricist and apriorist, can still be retained, is of little consequence except to those who must set their house in order, providing that pragmatism as a doctrine must be reckoned with.

In the first place, pragmatism as a doctrine is so simple and as old as a matter of scientific procedure that it is impossible to understand why so much dust should have been raised about it by its opponents. It is simply the application of the ordinary method of the scientific testing of a hypothesis to philosophic hypotheses as well. It is certainly high time that philosophy, in many respects the oldest of the sciences, should take on scientific definiteness and severity or else regard itself as a department of poetry.

Now pragmatism, as so often stated, holds that you cannot test the truth of a hypothesis or judgment independent of conduct. The truth of an idea or plan must be tested by the procedure to which it leads. You can, of course, insist with the medieval critics of astronomy that there must be seven planets because there are seven days in the week, etc., *i.e.*, from the *a priori* fitness of things, but the curiosity upon which science is based always insists on trying the assumption; and if experience indicates more planets, we revise the hypothesis to fit the facts. This is the "practical" testing of a doctrine in science.

The testing of a doctrine in terms of conduct, or comparing the anticipated consequences with the consequences to which it leads in being carried out, need not always mean material consequences. There is a conduct of the understanding as well as a conduct involving certain perceptual events as its

outcome. The procedure may be entirely of a logical kind as in formal logic and pure mathematics. But here, too, the idea is true only as it terminates consistently in its intended result. The consequences must be shown to follow from the definitions and not from assumptions or intuitions surreptitiously introduced in the course of the argument. The rules of logic, as the rules of ethics, have been adopted for their convenience in conduct.

Common sense and intuition may short-hand our scientific methods, and are valuable in many cases, but they are not truth, in the scientific sense, until the conclusions thus arrived at are systematically tested in the actual procedure of experience.

We sometimes have to choose between different rules or concepts. In this case we must ask ourselves what difference it will make if I choose one rather than another method of procedure. It may make no ultimate difference. The same problem can be solved by plain arithmetic or by algebra. Both solutions are equally true. Only habit and convenience, therefore, can decide between them. When two roads lead to the place to which I want to go, other things being equal, I take the most economic road. Esthetic or other motives, however, may influence me, besides the mere desire of arriving, and so I may choose the longest route. And so in the choice of hypotheses. But in any case the hypothesis is verified only as it terminates in the intended result; as its ideal consequences tally with the conditions which I have set myself to meet, whether purely logical or perceptual as well.

Now I certainly have a right to profit by previous experience, whether my own or that of others. I may have faith in a chart of the road already provided, without going through the trouble of mapping the routes in that particular neighborhood again. But this deductive truth rests no less on conduct; and if it should fail, in the process of adjustment, to satisfy the demands of further conduct or experience, it must be revised, however venerable or distinguished may be its ancestry. Truth about reality as a whole, or any part of it, however abstract, consists in the differences that reality makes to our reflective purposes in their historic realization.

To ask, therefore, whether a statement is true is equivalent to asking: What must we take the selected object as, in the procedure of experience? This is as true of the formula, $2 + 2 = 4$, as of the proposition, Socrates is mortal. For some purposes taking two pounds twice is equivalent to taking four pounds once. This obviously is not always so. Taking two women one hundred pounds each is not equivalent to taking one woman two hundred pounds if the purpose be marriage. In the former case you will be thrown into jail for bigamy. The intuitional character of the formula is due to the fact that we have forgotten the concrete procedure, the beads, for example, that were used by the primary teacher to overcome our stolid incredulity. The only way that you can know that you know is by trying out your knowledge, and even then, owing to the finitude of our nature and the complexity of reality, our certainty

is decidedly empirical. We no doubt confront the environment with all sorts of tendencies or categories, more numerous than Kant's table, but truth they are not, until they are reflectively tried out, in the procedure of experience.

But is not truth agreement with reality? the hard-headed critic always comes back. Yes, certainly, *i.e.*, with the reality which we intend, which may be the constitution of number or of a chemical compound. We rarely ever aim at reality as a whole, any more than we aim at a bear as a whole when shooting at him. The subject of our judgments is almost always a selected part of reality, not reality in general. But the pragmatist doctrine, so far from denying that truth is agreement with its intended reality, has for its purpose to make explicit what we mean by such agreement. And what we mean is what science always has insisted, viz., that the consequences which follow from the hypothesis, or the constitution of the object *as we have conceived it* on the basis of past experience, shall tally with the consequences *in dealing with the object*, or with further experience, formal or empirical, according to the problem set. There is no such thing as agreement in the abstract; no way of finding out the truth of an idea by merely examining its eternal fitness in general. It must, in order to be true, fit its intended constitution, as Royce has so splendidly shown, and this can only be found out by observing the results of our experiment, by the tallying of our hypothesis with our systematic observations. The data thus caught, simplified and organized through the network of our concepts, which in turn have been progressively modified to meet the demands of the data, is what we mean by the laws of science. Whatever reality may be, science is a systematic sorting of experience in the realization of our interests.

I suspect, however, that what has given rise to this long and confused controversy is not pragmatism as an epistemological theory, but the various epistemological and metaphysical consequences which some of the "pragmatists" have arrived at, supposedly by the pragmatic criterion, and which have been included by them and their critics under the general heading of pragmatism. Of course, if you include any professed pragmatist's results under pragmatism, then you will have an indefinite number of pragmatisms with hopeless confusion of the epistemological issue.[1] Just because a professed pragmatist, even William James, happens to hold a doctrine does not necessarily make it part of the theory of pragmatism. His philosophic results would have to be tested by the pragmatic criterion, quite irrespective of his having subscribed to it. Even the best people's conduct does not always agree

[1] Lovejoy's "Thirteen Pragmatisms" seem a petty allowance, when you consider the variety of human nature and the number of possible applications of the pragmatic method. But such analysis has been wholesome in exposing the confusions in the pragmatist camp and thus clarifying the main issue. See *Jour. Phil. Psych. and Sci. Meth.*, Vol. V, Nos. 1 and 2.

with their ideals. And the pragmatic criterion is an epistemological ideal, which we finites can, only by cumulative striving, if ultimately, realize.

Let us see briefly now what pragmatism is not. In the first place pragmatism does not involve that the true and the useful always coincide. Such an *a priori* assumption about the universe is anything but pragmatic. Truth may, of course, turn out to be useful. I would not say with a German scientist that the best part of science is *dass es gar nicht anwendbar ist*. The utilitarian motive has often been important in the investigation of truth, sometimes on the part of the investigators, but more often in the material promotion of investigation. It is true, however, that the most important investigations in pure science, such as the beautiful researches in light and electricity, were carried on without reference to their utilitarian consequences by people inspired by a divine madness to discover the hidden harmony of things; and their results were finally patented by people who reaped where they had not sown. But whether researches are useful or not, their usefulness does not make them true. On the whole we are doubtless better able to adjust ourselves to an environment because we know more about it, can respond to its characteristics, though in limited, pathological cases ignorance and deception may be more useful than truth. But the statement that truth is, on the whole, useful is a conclusion and not a part of pragmatism as an epistemological criterion. Whether it is a legitimate pragmatic result, any one is free to test, where all hypotheses must be tested, in the procedure of experience.

In the second place, pragmatism is not equivalent to humanism. No doubt it is true, so far as we are concerned, that reality must pass through human nature to be known. We humans know reality by the differences it makes to our human, specific, reflective purposes in their attempt at realization. But it is not our being human that makes our hypotheses come true; it is their tallying with the constitution of the object aimed at, as it appears in further experience. And there is nothing to show that this experience, whether on its logical or perceptual side, is peculiarly human. The weight, or color, or size or position of a thing is not peculiarly human as distinct from other animals. A "dog-faced baboon," so far as we know, has the same sort of perceptions that we have, and is subject to the same laws of association. If a dog-faced baboon or a tadpole should construct hypotheses or their equivalents, they would have to be verified in the same pragmatic way as human hypotheses are. It matters not what sort of finite being tries to arrive at truth, whether man, baboon, or angel, the test of truth, so far as we can see, would be the same.

If what is intended is the statement that the nature of reality is made over in knowing it and that therefore we are limited to the charmed circle of experience, this, too, is an unpragmatic assumption. While it is a mere circle to say that we can know reality only as it appears in cognitive experience, or for what it must be taken as, it is a gratuitous assumption to insist that what

reality is known-as, is contrary to what reality is, that the weights and distances and masses of things exist only as we humans take account of them. When we take account of them, they have *meaning* for us, but our taking account of the qualities of things at all is generally forced upon us by their existence, which we must meet in order properly to adjust ourselves. At least it is not pragmatism to decide *a priori* that things are not what they seem.

May there not be cognitive beings superior to us humans? Or are the humanists absolutely convinced that we humans are the only cognitive beings in the universe? That certainly is no part of the pragmatic theory of truth; but, even if true, it is not being human that makes a proposition true, but its termination in the intended facts.

Is pragmatism, as a theory of truth, committed to the instrumental point of view as regards concepts? Not in the sense that truth exists solely for the sake of satisfying certain demands extraneous to itself, for example the biological end of adjustment. Truth sometimes finds its inspiration in such practical demands, but it sometimes finds its motive in scientific curiosity. In any case the test must be the same. Truth is always teleological, because it exists for the sake of a relation to a larger whole, but this relation need not be instrumental in the narrow sense that truth is an extraneous tool, like a knife, to be judged by its mere success. False ideas may be temporarily successful. Truth as a matter of fact must always be imitative of its object to a certain extent. It can never be conventional in its *content*, however conventional our *symbols* may be. In the case of knowing a system of truth it must be imitative of the meaning of the object; in the case of thing-objects it must be imitative of certain qualities of the object. Inasmuch as our finite truth is not exhaustive, but always implies a more, a larger constitution to be investigated, it must be regarded, in so far, as instrumental to its own completion, a means to its own more comprehensive end.

Can the pragmatic criterion be stated in terms of satisfaction? That depends upon what sort of satisfaction we mean. No doubt the seeking for truth has its own hedonic tone, according to its success or failure. The satisfaction, so far as the truth interest is concerned, is the tone accompanying the testing of the hypothesis in procedure, so far as that special intent is concerned. But the truth satisfaction may run counter to any moral or esthetic satisfaction in the particular case. It may consist in the discovery that the friend we had backed has involved us in financial failure, that the picture we had bought from the catalogue description is anything but beautiful. But we are no longer uncertain as regards the truth. Our restlessness, so far as that particular curiosity is concerned, has come to an end. And this satisfaction may sometimes be strong, even when the practical outcome is against us. The rejected lover gets some peace of mind from knowing the truth as to his failure. But this is hardly the satisfaction of winning his suit.

Is pragmatism realistic? Only so far as it intends a world beyond our finite cognitive purposes. The finite fragmentary intent must find its reality or

correction in a larger whole. I do not know of any striving for truth which is not realistic in this sense. How could it be a striving for truth otherwise? But obviously a criterion of truth must be unbiased at the outset as regards the epistemological or metaphysical result of its application. The reality we seek to know may ultimately be more experience – yes, we must be willing to have it turn out to be an absolute unity of thought, if the procedure of truth leads that way. But pragmatism neither assumes at the outset that the object in order to make any difference to the cognitive purpose must itself be experience, nor does it assume *a priori* that reality cannot possibly be what it is known as being, because external to experience. What reality is, what differences it can make, is precisely to be found out. The constitution of the universe is idealistic or materialistic, monistic or pluralistic, according as we must take it, as the outcome of the pragmatic test. But we must all start with the same criterion, else there can be no discussion of truth.

Truth is systematic meaning, systematic experience about the object. This meaning, in case we are striving to know other experience, must be identical with the content of the object; but the qualities of an object which is not experience may become content for us through perception. In any case truth is our systematic *percipi*, as it is revealed in our specific procedure, whatever the metaphysical character of the object may turn out to be. We have no right to take for granted that what is to be known is more content, independent of our knowing, with which our preformed guess can be accidentally identical and so be called true in advance of verification.

It is difficult for me to understand what is meant by unverified truths – unverified science, truths which no one knows to be true, for if any one knows them to be true – God, or man, or monkey, they have fulfilled the pragmatic test. They are seen to terminate or find their completion in the intended object. If a proposition has no systematic basis in experience, we speak of it as a mere guess. As that brilliant pragmatist, Xenophanes, puts it, "All are free to guess" and, "These are guesses something like the truth, ... but by seeking they gradually find out what is better." In Xenophanes's time there was but little cumulated scientific observation. Hence he is naturally impressed with the guess character of his statements about the universe. When a supposition is based upon analogy and previous scientific observation, we call it an hypothesis, but it is only as the hypothesis is fully tested in terms of the intended facts that we call it truth. Truth, therefore, so far as we finite seekers are concerned, is a limit which we are far from having realized. Whether we can realize it or not, only the historical outcome of the pragmatic test can prove. It is certainly unpragmatic to say in advance that truth is unrealizable. In the meantime we have our provisional "truths."

I suppose the reason that some have insisted upon propositions being true in advance of being tested is that in individual experience, especially in an advanced stage of science, we find a large body of social truths, which we can

take, for practical purposes, as ready-made. We find that truths exist independent of our individual verification, and then some assume that they exist independent of all verification. Seeing the agreement of the hypothesis of gravitation with its intended facts, they insist that the hypothesis must be true in advance of the discovered agreement, as though truth could be a guess *in vacuo*. What they mean is that reality has a constitution in advance of our investigations and that so far as our cognitive nature is concerned the qualities of reality are not created, but discovered. Whether they are created through our volitional nature, or exist independent of our act or positing, is a question which the application of the pragmatic method alone can determine. But all this controversy about preëxisting truths is a lexicographical one and would be over if we recognized the established philosophic usage, as old as Xenophanes, that truth is systematic meaning, corrected and completed in its intended reality.

If we state truth thus, there can be no ultimate difference between truth and the test of truth. A proposition is *proven* to be true because it terminates in its intended object, imitates this either as regards its inner content or as regards its qualities. But it *is* true for the same reason. What makes the test of truth seem something different from the truth itself is that in the process of verification the test seems external to the intent of thought. It seems to happen to the idea in a more or less accidental way. But this is a superficial way of looking at the process of discovery. For the facts only happen to the intent of thought *because we are seeking them*, however much our meaning may have to be corrected in the process. The test is our further experience about the object *as selected* by the intent. But the intent is not, taken by itself, the truth, any more than the consequences of further experience are the truth taken as external happenings. It is the intent as terminating in the selected facts which constitutes the truth. And this termination is the test of truth, or the intent as tested constitutes the truth.

Is pragmatism a theory of empiricism as opposed to rationalism and *a priorism*? No, pragmatism is not committed to any *a priori* doctrine of the origin of ideas or their connection. It is not committed to Hume's association theory any more than to Plato's doctrine of recollection from previous existence. Pragmatism may be said to agree with rationalism in holding that truth has a formal side. A hypothesis or system must be internally consistent. But pragmatism insists that this is not sufficient: there must also be external agreement, or agreement of the hypothesis intended facts. As regards the other historic antithesis, that of empiricism and *a priorism*, pragmatism is equally non-committal. It is a theory of the test of truth, not of the origin of its categories or postulates. Whatever demands or tendencies are inherited, they must be consciously tried out in experience as regards their agreement with reality before they can be called true. The categories might originate by use-inheritance, by natural selection, by divine implanting, or by mystical

intuition, so far as pragmatism as a theory of truth is concerned. The question is: Will they work in simplifying experience and meeting the character of the environment? The theory of their origin must itself be subjected to the pragmatic test.

Is pragmatism at the outset committed to time and chance as the ultimate character of reality and, therefore, to the impossibility of any final truth? This again is a theory to be tested by its pragmatic outcome. *A priori*, eternalism may be the outcome of pragmatism as well as dynamism; or perhaps partly the one, partly the other. Because the discovery of truth is a temporal process, it does not follow that truth relation as discovered are temporal. The truth 2 + 2 = 4 may be eternal, however long was the evolution which led to its discovery. At any rate, there can be no such thing as pragmatic dogmatism.

A professed pragmatist may of course hold any of these doctrines, and a large number of them, either as his individual application of the pragmatic test or for other reasons. He may also, like me, be an Episcopalian, a free-trader, etc. Do all the doctrines and practices of the Episcopal Church become pragmatisms when a pragmatist belongs? I have known pragmatists to drink beer, to attend dime theatres, and even to swear. Are all such practices with their implied damnable theories of life therefore pragmatisms? And do they also come under *Scepticismus*, as the German critics would say? God forbid. It makes one's flesh fairly creep to think of all these uncanny associations – these sins on the part of our clever young critics, committed in the name of pragmatism. But are they not, after all, primarily sins against formal logic? A is a free-trader. A is a pragmatist. Therefore all pragmatists are free-traders. That looks very much like an illicit minor in the third figure. It might also be treated as a fallacy of composition. It would seem as though the "intellectualists" ought to have a little respect for formal logic.

If you say that in the above case pragmatism is not new at all, but as old as science, I would quite agree with you. No one more than the pragmatist has disavowed any intention at originality. It is better to be true than original. But the amount of dust raised seems to indicate that an old, implicit scientific procedure was but vaguely understood. If the result of this paper should be to convince my readers that they are all "pragmatists," then we shall have "peace on earth, good will to men" once more, than which no more blissful consummation could be desired, unless it be strife.

PRAGMATIC REALISM

John Elof Boodin. "Pragmatic Realism." *Truth and Reality: An Introduction to the Theory of Knowledge* (New York: Macmillan, 1911), chap. 14, pp. 251–258.

In the following chapter I wish to discuss three points: the definition of realism; some objections against realism; and some consequences of pragmatic realism.

I

There has been a great deal of confusion in regard to terms in recent discussion. It may be well, therefore, to define, at the outset, what we mean by realism. A number of writers have called themselves realists and proposed to champion realism, when they are really indistinguishable from idealists. Here, at least, the Leibnizian law of indiscernible ought to hold. If the terms realism and idealism are retained at all, they ought to stand for different concepts. Leaving out all reference to the metaphysical stuff for the time being, realism means the reference to an object existing beyond the apperceptive unity of momentary individual consciousness, and that the object can make a difference to this consciousness so as to be known. The object, in other words, is dependent upon the cognitive moment, not for its existence, but for its significance. Idealism, on the other hand, would hold that there is strictly only one unity of consciousness and that existence is a function of being part of a significant cognitive system. Thought is so wedded to things that things cannot exist without being thought. This assumption on the part of idealism may be veiled under various terms, such as appearance and reality, the finite and the infinite, the incomplete purpose and the completely fulfilled purpose; but in the various forms of expression the assumption remains that all the facts are ultimately and really strung on one unity of thought.

Realism is an epistemological attitude and has to do with the relation of the cognitive meaning to its object. As regards stuff, it may be materialistic, spiritualistic, dualistic or pluralistic. As regards connection it may hold the mechanical interpretation concerning the relation of parts; or it may hold the teleological point of view; or partly one, partly the other, which is the position common-sense realism takes. As regards the numerical distinctness of the universe, it may be monistic, holding the universe to be one individual with

only apparent diversity in space and time; or it may be frankly pluralistic, holding to the numerical diversity and distinctness of individuals. As realism, therefore, is pledged to no brand of metaphysics, no odium need attach to it so far as metaphysics is concerned.

Realism, as I understand it, does not assume that there can exist isolated or independent individuals of such a kind as to make no difference to other individuals. No individual has any properties, chemical any more than psychological, by itself. Qualities are reactions or expectancies within determinate contexts. An isolated individual cannot even be zero, as zero must be part of a logical context at least. The hypothesis of independent reals is founded either on contradictory or on purely hypothetical conditions. Kant's things-in-themselves are instances of the latter kind. These cannot exist for experience or in relation to things as known. Yet they are supposed to be possible for an intuition entirely different from ours. Leibniz has recourse in the last analysis to an emanation theory and preëstablished harmony, which contradict his assumed independence. Cognitively independent his monads could not be in any case, since by implication they are aware of each other.

Realism does not deny that objects to be known must make a difference to reflective experience; that they are capable of being taken in a cognitive context. To deny this, within the universe of truth, would be self-contradictory. What realism insists is that objects can also exist and must exist in a context of their own, whether past or present – independent of the cognitive subject; that they can make differences within non-cognitive contexts, independent of the cognitive experience, of which the latter *a posteriori* must take account. Thus the wood in the grate burns, even though we are not taking account of it; the seed grows when we are asleep, through properties involved in its chemical context. Even our own meanings grow without our being reflectively aware of their change.

As our own cognitive meanings are necessarily finite, and any other type of knowing is necessarily hypothetical, it is difficult to see how any theory of knowledge can avoid being realistic. Absolute idealism, with its hypothetical unity; and mysticism, with its ineffable noetic intoxication, still must admit that the finite meaning, in striving for its completion, implies an object beyond its internal intent. To deny this is to fall into solipsism or to confuse one's self with the absolute. The complete absolute meaning cannot be said to depend for its existence upon our finite fragmentary insight. And it is with that finite intent that our problem of knowledge is concerned.

II

In order to clear the way for realism, we must get rid of some fundamental fallacies which permeate most of our past philosophic thought. One of these fallacies may be stated as the assumption that only like can make a difference

to like, or that cause and effect must be identical. This has been assumed as an axiom by idealism and materialism alike. For idealism and materialism are alike indiscriminative. Their method is dogmatic rather than critical. The only difference is in the stuff with which they start. Idealism, starting with meaning stuff, tries to express the whole universe in terms of this. Materialism, starting with mechanical stuff – stuff indifferent to meaning and value – must be consistent, or as consistent as it can, in expressing the universe in terms of this. Both buy simplicity at the expense of facts.

The problem is the old one of Empedocles: Can only like make a difference to like? "For it is with earth that we see Earth, and water with Water, by air we see bright Air, by fire destroying Fire. By love do we see Love, and Hate by grievous hate." Expressed in terms of modern idealism, from the side of individual consciousness, the problem would read: Can only experience make a difference to experience; can only thought make a difference to thought? The absolute idealist attempts this disjunction: The reality which we strive to know must either be part of one context with our own finite meaning, must be included within the completed purpose, the absolute experience, of which we are even now conscious as well as of our finitude and fragmentariness; or, on the other hand, the real object must be independent of our thought reference, must exist wholly outside our cognitive context, without being capable of making any difference to it. But complete independence is meaningless; therefore there must be one inclusive experience. To think an object is to think it as experienced, therefore it must be *experience*.

The issue at this point between the realist and the idealist is a two-fold one. The realist insists that there can be different universes of experience which can make a difference to each other; and also that what is non-reflective or non-meaning can make a difference to our reflective purposes, or *vice versa*. We can reflect upon a stone; that makes the stone experience *for us*. But does it also make the stone *as such* experience? It is as reasonable, at any rate, to say that only water can know water, and that therefore in order to know water we must have water in the eye or in the brain, as it is to say that in order to know the stone or to reflect upon the stone, the stone must be reflective. In either case our attitude is merely dogmatic. That objects in order to be known must be capable of being taken again, in the context of cognitive experience, is, of course, a truism. But that does not prove that they cannot exist without being known or that they must themselves be *experience* in order to be known.

Science has been forced to abandon the axiom that only like can act upon like. It is busy remaking its mechanical models in order to meet the complexity of its world. Chemical energy need not be the same as electrical or nervous energy, to make a difference to either. Chemical energy implies weight and mass, while electrical or nervous energy does not. The old metaphysical difficulty in regard to conscious and physical energy has given way to a question of fact. The question is not, *Can* they make a difference to each other? but,

Is there evidence of their making any difference to each other? A cup of coffee or a good beefsteak makes a difference to thinking. But that does not necessarily make them thought stuff. Whether cause and effect are identical, either in time or in kind, is something for empirical investigation to determine, and not to be settled a *priori*. Science presents strong evidence that they need be neither. The light rays may have traveled through space many years before they make the difference of light sensations in connection with our psychophysical organism; and that they make such differences does not prove that they are themselves sensations.

It is time that philosophy, too, were abandoning dogmatism in favor of facts. It is no longer a question of materialism or idealism; but we must use idealistic tools where we are dealing with idealistic stuff, and mechanical categories where the evidence for consciousness and value is lacking. We must learn to respect ends where there are ends; and to use as means those facts which have no meaning of their own. To fail thus to discriminate is to be a sentimentalist, on the one hand, or a bore, on the other. What we want is a grain of sanity, even the size of a mustard seed.

The merit of idealism, and for this we ought to give it due credit, is that it has shown that the universe must be differentiated with reference to our purposive attitudes. This is true whether the reality to be known is purposive or not. Where idealism has been strong is in interpreting institutional life. In order adequately to know another meaning, we must copy or share that meaning. This is true whenever our reality is thought stuff. Idealism, on the other hand, has always been weak in dealing with nature, and, therefore, in furnishing the proper setting for natural science. Idealism has striven to institutionalize nature or to reduce nature to reflective experience. In order to do this, it has been forced either to insist upon the phenomenality of nature, with Berkeley and Green, or to take the ground of Hegel, John Caird and Royce, that nature is essentially thought, social experience, the objectification of logical categories, though *an sich* and not *für sich*, *i.e.*, only as lived over by reflective experience. Hence nature becomes capable of system; it is essentially systematic. In thus hypostatizing the unity of apperception into an objective unity of nature, idealism has failed to discriminate. The stone and Hamlet are lumped together. But we cannot acknowledge or react on nature as experience on its own account, and therefore idealism breaks down. We make the *conceptual system* of nature, as social minds, to anticipate the future and to satisfy our needs. The *meaning* of the energy that satisfies, and of the transformations by which it satisfies, is furnished by our ideal context. That water satisfies thirst; that fire burns wood – these are extra-subjective energetic relations. But the why must be furnished by our scientific experience, partial and fragmentary though it is.

Materialism has been quite right in applying the mechanical categories to part of reality. The mechanical ideals will always find favor in natural science,

where the aim is not the understanding of an objective meaning, but *control* of nature for our purposes. Where the materialist shows his dogmatism is in applying categories which are convenient in dealing with the non-purposive structure of the world to institutional reality as well. In failing to make them work here, instead of calling into play new categories, he insists upon eliminating the refractory world of meaning and value, while the idealist, with his eye primarily on the world of social tissue or ideals, has insisted that the real is essentially the social or communicable. Each has failed to recognize how the other half lives.

Another dogmatic fallacy which has been committed by idealists, to smooth out the realistic discontinuities and ease the shock of actualities, is the play upon the implicit and explicit. I would not say that the category of the implicit has no legitimate use. Wherever we are dealing with a purposive whole of any kind, intellectual, ethical or esthetic, we not only can but must use the category of the implicit. The earlier part of the argument must imply or foreshadow the later within the logical unity. The earlier part of the dramatic plot must find its fulfillment in the later; the moral struggle points to an ideal. The abuse of the category of the implicit comes when we apply our purposes to infra-purposive realities. Because thinking as a process arises under certain structural conditions of complexity, this does not prove that earlier and simpler stages of development must be treated as degrees of thinking. There seem, on the contrary, to be qualitative leaps in the genetic series of experience, not reducible to the quantitative category of degrees. Thinking is a new fact in the series – furnishes a new context of significance. Again, because we systematize nature according to the presuppositions of the reflective moment, this does not imply a reflective unity in nature. Here again there seems to be a discontinuity, so far as meaning is concerned, which thought must acknowledge and cannot bridge, objectively, at any rate, by any implicit assumption as regards thought's own procedure.

Another current dogmatic fallacy is the assumption that because we *take* contents over in thinking them, therefore we *transmute* or make them over, if indeed we do not create them outright, in taking account of them. But the transmutation of the immediate or non-reflective has to do with its significance, not its content. The colors in the painting are the same that we have seen thousands of times, though here they are used to express a new meaning. The gold we think about has precisely the same qualities as the gold which was present as an object of immediate perception or esthetic admiration. It does not change its color or size because we reflect on it. It is the same object with the same qualities and relations, except that much of the existential has been omitted and the relation of cognitive significance has been superadded.

Another fallacy is the assumption that what is not stuff cannot be real. This assumption is very old. It is assumed by Parmenides when he dismisses non-being as unthinkable and unspeakable. It is assumed by Kant in his antimony

of space and time, when he maintains that the relation to nothing is no relation. Most philosophers have followed the leadership of these distinguished thinkers. But the assumption that zero is unthinkable and that the relation to nothing is no relation has been abandoned by mathematics for logical reasons. There is no more important relation in number than the relation to zero. The limiting concept of zero has also proved of great value in metaphysics as well as in mathematics. Take space for example: While space is no *thing*, yet as distance it is an important condition in the interaction of things.

III

Instead of the dogmatic method pursued by the old idealism and materialism alike, we must substitute the critical method. This method has been rechristened within recent years by C. S. Peirce and William James and called pragmatism. As I understand this method, it means, simply, to carry the scientific spirit into metaphysics. It means the willingness to acknowledge reality for what it is; what it is always meaning for us, what difference it makes to our reflective purposes. Instead of insisting upon identity of stuff, as dogmatism has always done, this method is discriminative. It enables us to break up the universe and to deal with it piecemeal, to recognize unity where there is unity and chaos where there is chaos, purpose where there is purpose and the absence of purpose where there is no evidence of purpose. The universe in each part or stage of development is what we must acknowledge it to be – not necessarily what we *do* acknowledge, but what we *must* acknowledge to live life successfully. This acknowledgment, moreover, is not a mere will to believe or volitional fiat, but, at least as knowledge becomes organized, a definite and forced acknowledgment. An unlimited will to believe as regards objective reality would be possible, if at all, only before we have organized knowledge, that is, if you could imagine knowledge starting in a conscious will-act. When we already have organized knowledge, if we choose to know, the possibilities become limited. In case of fully organized knowledge, the place of the indeterminate will-to-believe would be the will-not-to-think, that is, to commit intellectual suicide.

We can not state the truth attitude in merely subjective terms. The truth attitude must face outward. It must orient us to a context existing on its own account, whether past or present. In such orientation or such external meaning lies the significance of truth. The truth attitude cannot be characterized as merely doubt with a transition to a new equilibrium, and as ceasing with certainty. The truth attitude *may* at least involve the consciousness that we know that we know. To be sure, the nervousness of science leads us to repeat the experiment in order to make sure that we have made no mistake; but that does not alter the truth of our first finding, if the experiment proves correct.

Truth, as we have it, involves two things, – first, luminousness, or a peculiar satisfaction to the individual experience at the time, due to its felt consistency or fluent termination in its intended object. This is the positive truth value, whether formal or factual. The other factor involved in scientific truth is the feeling of tentativeness or openness to correction. This is a qualification or nervousness on the part of the truth attitude, either as a result of an actual feeling of discrepancy and fragmentariness as regards our present meaning; or it may be due to a more general feeling of instability based upon our finitude and the time character of our meanings. Such correction can only come through further experience, whether of the immediate or formal type. We cannot say that the value *consists* in the future consequences or leadings. These obviously have no value until they come. Further experience furnishes the possibility of correction of our truth values and so of producing new values. I say *possibility* of correction because repeating the experiment, while it relieves our nervousness, does not necessarily produce a new truth. The truth meaning must first be stated in schematic terms on the basis of the data as we have them and then tried out in terms of consequences. Such consequences must be in part present to us as a result of past experience. We do not formulate theories *in vacuo*. If the truth value lay merely in the future consequences or leadings, there could be no such thing as truth value. Truth must face backward in order to face forward. It is Janus faced.

We may lay it down, then, that the real must be known through our purposive attitudes or conceptual construction. Real objects are never constituted by mere sense perception. They are not compounds of sensations. Sensations are our awareness of the going on of certain physiological changes, whether connected with an extra-organic world or not. They cannot be said, therefore, to constitute things. These presuppose selective purpose. They can only become objects for a self-realizing will. The real is the intelligible or noumenal, not the mere immediate; and by the noumenal I mean what we must meet, what reality must be taken as in our procedure, as opposed to our sensations. It is through conative purpose that knowledge of the character of our world becomes possible. The immediate, however, must furnish the evidence; in the language of James it puts us next to the real object. It establishes energetic continuity with the intended context of reality.

Empiricism is at best a halfway house. We cannot say that the real is merely what *is* perceived or what *makes* an immediate difference to our conscious purposes, whether in the way of value or of fact. We must at least say that the real is what *can* be perceived, unless we bring in some *deus ex machina* or supernatural storehouse of percepts, as Berkeley does. Surely the empirical idealist of to-day would not say that the increased powers of the telescope or microscope create the facts. Nor can the *uniformity* of our expectancies be credited to our individual perception; and hence from the perceptualist point of view, it requires another *deus ex machina*. To say that

uniformity or stability is a social fact does not explain the fact, but presupposes an extra-social constitution, a constitution binding upon all of us. Not only perception, but *possible* perception must be invoked to complete the empirical idealist's reality; and "possible" itself is not a category of perception.

As the old idealist and the old realist alike assumed the qualitative identity of cause and effect, it became necessary to think of subjective states as copies of external qualities. Naïve realism and idealism alike assume this copy-relation of the subjective on one hand and the real qualities on the other. In modified realism, the primary qualities at least must be copied. For the empirical idealism of to-day the problem still remains as to whether the perceptions and the objective qualities are the same. Unless the idealist becomes a solipsist he must show that his subjective copies are adequate to a world as existent. This difficulty would vanish, once we abandoned the dogmatic and unintelligible duplication of qualities, as though qualities could exist passively by themselves. Qualities are energies. They are what objects must be taken as in determinate contexts. To ask what perceptual qualities are, when they are not perceived, becomes in that case as superfluous as it is meaningless. Processes, of which we are not conscious, have no perceptual qualities, unless, under certain other conditions, they can make perceptual differences to beings organized as we are. To speak of archetypal qualities is merely duplicating this moment of perception – to take what exists in a context as an abstract idea. If these non-conscious reals act upon other non-conscious reals, we have not perceptual differences, but chemical or physical changes. These must be interpolated by us in order to make continuous our perceptual scheme. We saw the wood burning in the grate: in our absence the fire has gone out and the wood has turned to ashes. To piece together this discontinuity in our perceptions, we must assume certain differences or changes which cannot themselves be expressed as perceptions. And thus we come to realize that while we must take some qualities of things as existing as part of our perceptual context, we must also take other qualities as existing independent of perception in their own dynamic thing-contexts, which we can read off *a posteriori* and predict under determinate conditions.

Perceptual qualities, therefore, are not the only qualities. Even granting a being who should have perceptual differences for all the changes going on, minute or great, and without breach of continuity, he would not have a complete account of reality. The real individual cannot be exhausted as a compound of perceptual qualities. He must be acknowledged as something more than the sum total of his sense appearances, past, present and future. If sensations alone constituted reality, then the more sensations the more reality. Take Helen Keller's reality, for example, on this supposition. For convenience, I will use Professor Titchener's estimate of the number and kinds of sensations, leaving aside the question here as to whether all sensations can be taken as sense qualities. According to him, sight furnishes us 32,820

different sensations, hearing 11,600, making a total of 44,420. As Helen Keller possesses neither the sense of sight nor that of hearing, her reality would be to our reality as 15 is to 44,435. But Helen Keller seems to be able to enter into communion with human beings all over the world, to share their purposes, to sympathize with them and help them better than most human beings with the use of all their senses.

The reason the position that reality is the sum of its perceptions has seemed so plausible lies partly in the fallacious use of the method of agreement, partly in the confusion between the *causa cognoscendi* and the *causa essendi*. The perceptual qualities do exist; and it is through them we become immediately conscious of an external world. Objects are what they are perceived as, but indefinitely more. We must not forget that there are other contexts, such as the multitudinous thing-contexts and the contexts of our will attitudes. These may be practically more significant for determining the reality of a thing than our sensations – not all of which can be treated as sense qualities. It may be of more practical significance for the nature of water that it satisfies thirst than that it gives us a number of contact reactions. When we come to deal with a human being, a friend of ours, the inadequacy of mere perceptual qualities becomes even more evident. He is not to be taken merely as his height, nor his color, nor his softness, nor his hardness, nor even the sum total of all the perceptions we can get. He is primarily what we must acknowledge, what fulfills a unique purpose on the part of our wills, and, as opposed to the gold or the stone, a reality with an inner meaning which we can to some extent copy.

We have seen that experience becomes truth only through conceptual construction or purposive will attitudes. Percepts only become cognitively significant as *termini* of ideal construction, as verification stuff. No wonder that the perceptualists have not been able to discover non-being dimensions, since these could not be perceived, but discovered only through the most subtle conceptual tools, according to the real difference which they make to our purposive striving. We have already indicated that because reality can only be known through conceptual construction, that does not mean that reality must be conceptual. Reality is, however, knowable only in so far as it is conceptualized. In recognizing that reality could not be treated altogether as purpose, moral or intellectual, Kant showed a keenness far exceeding that of his critics.

Since perceptual qualities are the felt continuities or functional connections of energetic centers, when a conscious agent is part of the complex, there can be no sense in speaking of these qualities as either acting upon the will or parallel to the world of will acts. The perceptual qualities do not exist independent of the concrete situation, so that they could act upon it. They are what the object must be taken as, or known as, in the special psycho-physical context. They preëxist only potentially, *i.e.*, as what the object *can* be taken

as in the determinate context. They are, however, only one type of transeunt connections or energetic continuities. These energetic continuities may be intersubjective relations, and in that case communication and conceptual understanding are possible. They may be relations to centers below the reflective level. In that case knowledge becomes instrumental – a reweaving of a non-meaning context into the unity of our purposes.

Equipped with our subjective purposes, or conceptual tools, we can confront the larger world. In the course of conscious experience, as we strive to realize our tendencies, formal or practical, the world beyond us becomes differentiated and labeled according to our success or failure. But the real objects are not constituted by our differentiation, except when we make our realities outright, as in the case of artistic creation. The meaning for us is, indeed, created in the course of experience, but not the objects which we mean. Else science were impossible. The real objects must be acknowledged or met, whether they are to be understood or to be controlled.

The world of real objects may be differentiated into two general divisions, the world of being or stuff, on the one hand, and the world of non-being or non-stuff, on the other. By the former I understand various types of expectancy or uniformity, which we can have in regard to our perceptual world. These types of uniformity, again, can be graded into two main divisions, namely, those which we can acknowledge metaphysically as purposive in their own right and those we must acknowledge as existing and must meet, but which have no inwardness or value on their own account. The former we must learn to understand and appreciate, the latter to anticipate and control. The former constitute the realm of idealism, the latter of materialism. As regards the stuff character of reality, this theory is frankly pluralistic, acknowledging different kinds and grades of energetic centers according to the differences they make to our reflective purposes.

But we must also take account of the non-stuff dimensions of reality. These differ from the stuff types in that they are not perceptually continuous with our psycho-physical organism. They cannot appear as immediate phenomena, but still must be acknowledged for the realization of our purposes. Thus we must acknowledge the transformation of our values, the instability of our meanings. *Time* creeps into our equations and makes revision necessary. New values can only be had by waiting. Again, *space*, as distance, abstracting from the content of space, conditions our intersubjective relations, as well as our relations to non-purposive beings. It makes possible externality of energetic centers and free mobility. Further, the relativity of our meanings and ideals makes necessary the assumption of an absolute *direction*, a normative limit, to measure the validity of our finite standards. Lastly, we find it convenient to abstract the fact of *consciousness* from the psychic contents and the conative attitudes. While our awareness is intermittent, the conative attitudes and purposes may be comparatively

constant. These non-stuff dimensions must be regarded as real as the will centers which they condition. They are more knowable than the world of stuff, because their characters are few and simple, whereas the varieties and contexts of stuff are almost infinite. Thus, by means of our conceptual tools, we are able to discover not only various kinds of stuff, but we are able to discover dimensions of reality of ultimate importance, where microscopes and telescopes cannot penetrate – realities which eye hath not seen nor ear heard, nor ever will see or hear, more subtle than ether or radium.

PRAGMATIC ENERGISM

John Elof Boodin. "Pragmatic Energism." *A Realistic Universe: An Introduction to Metaphysics* (New York: Macmillan, 1916), chap. 3, pp. 33–61.

The Nature of Energy

Through a chronic tendency of the human mind, due to the stereotyping effect of language, philosophers have sought for energy as a thing-in-itself. It has long been maintained that we can know only the effects of energy, and the conclusion has been drawn that energy itself is inscrutable and unknowable. If effects or changes are merely external relations, they will indeed show us nothing about things. But it must be clear that such an agnosticism is of our own making. Since the fundamental characteristic of energy is activity, it would seem that the saner attitude is that of common sense and science, both of which estimate energy by what it does. What we know about our world in our experience is meager enough, but we have at least a right to assume that our fragmentary evidence is real so far as it goes. And if energy reveals itself in certain physical and psychological changes, these, we must assume, indicate the nature of energy. We must hold to the pragmatic postulate that energy is what it does. Any other assumption is suicidal at the outset.

Others have insisted that we have immediate and intuitive evidence of the nature of energy in our sensations of strain, our feeling of effort. Now this is true, no doubt, to the extent that, if we were not ourselves active beings, we should not be conscious of energy in nature. The fact is that we should not be conscious at all. Psychological analysis shows that the feeling of effort consists in certain kinaesthetic sensations – sensations of muscular tension about the forehead and in the throat, of labored breathing, etc., when we are baffled by a problem. But these sensations are not mental activity. They are reflexes merely, – symptoms of a somewhat unorganized or obstructed stage of activity. They are not concomitant to all our activity. When the particular activity becomes organized and proceeds fluently and easily, the sensations of strain disappear. But the activity does not disappear; on the contrary it is now most efficient.

Science has followed the pragmatic method and insisted that energy must be known by work done and the sort of work that is done. It is true that in the minds of scientists there have lingered reminiscences of an antiquated metaphysics, of an energy-in-itself, of occult "forces," and "latent" energy.

But such misconceptions have had no effect on the empirical results of science. These have to do with predictions of behavior under definite conditions. And by behavior science does not mean merely a sequence of perceptions. The assumption that these constitute the whole story is a metaphysical interpretation of science. Of course we must know reality through our perceptions, *i.e.* we must become aware of its changes. But science does not assume, as phenomenalism does, either that we are dealing *only* with perceptions or that our perceptions of things are "faked" manifestations of an energy in itself. Our perceptual system may inform us of what energy does in systems outside of the cognitive relation. Our seeing the gunpowder, and the spark applied to it, and the explosion with its results, informs us of what is happening in our environment. It is not our perception of the explosion which makes the explosion occur; the work done by the energies involved must be taken account of in their own context. In other words, science is dealing with real activities, as revealed in various contexts, including our perceptual context. Whether again we measure energy in foot pounds, the work necessary to lift a pound a foot in a second, or in dynes, the work necessary to lift a gram one centimeter in a second, is of course purely a matter of practical convenience, and has no philosophic interest.

Work and inertia are merely two different points of view, due to the special interest for the time being. In speaking of work we emphasize the going on of activity in connection with a series or direction which we have selected. In speaking of inertia or mass, we emphasize energy which must be balanced, overcome, or withdrawn. To start a body moving we must overcome its inertia or its energy of position. Again, we cannot annihilate the energy of a moving body. According to Newton's first law, if a certain initial energy is communicated to a body from a definite base, it will move uniformly in a straight line unless interfered with by other energies. Here energy must be withdrawn or transformed in order for the body to stop moving. To eliminate interference, again, means the withdrawal of energy. In our practical social relations, we use inertia in a similar sense: it means energy which must be overcome or withdrawn. We must overcome people's opposition, scruples, or habits. We may be reformers trying to overcome people's prejudices, or we may be confidence men trying to withdraw people's caution. Work and inertia are pragmatic distinctions depending on our special interests in dealing with our world. They hold for all energies, whether it be material masses in space, or electric currents, or social interactions. We can see, then, that inertia is a universal characteristic of energy.

The simplest unit of reality is an energy system. Things do not have properties in themselves; they possess properties only within a system, and such properties vary with the conditions which determine the system. That properties exist in the abstract is one of the last superstitions of the old metaphysics. Take weight, for example, the most important property of

mechanical science. Does weight exist in things by themselves? We know that the weight of a body varies at different points of the surface of the earth. It is a function, though we do not know how, of the attraction of the earth. According to Newton's law, bodies attract each other in proportion to the mass, and inversely as the square of the distance. For very large distances, we know now that gravitation becomes negligible; and of course for infinite distance it becomes zero. A body at an infinite distance from other bodies would have no weight, which amounts practically to the same as saying that bodies by themselves would have no weight. If you say that such bodies have potential weight, that is the same as saying that they do have weight when they exist in connection with a certain finite system. The same could be shown for other qualities. Extension is a property things have for us in a certain perceptual energy system. This implies, beside certain external energies, a certain stimulation of the cells of our end-organs, and of our cerebrum. The number of physiological processes stimulated seems an important condition, though the sequence of stimulations must also be taken into account. In any case, extension as perceived is real only in an energy system, and varies with this. And the same is true of the extension of things with reference to each other. It varies with motion, temperature, and pressure. In so far as we apply size and weight to corpuscles moving with the velocity of light, both properties depend largely, if not altogether, on motion. Properties have no meaning for science, except as energy determinations, characteristics within energy systems. And this is as true for what we have been accustomed to call primary qualities as for the so-called secondary qualities. Science knows nothing about absolute properties.

The concept of energy as a universal generalization is a thin concept. But any predicate of the whole of reality must be thin. How convenient it would be if we could condense reality altogether into one formula, requiring no supplementary definitions, – matter, spirit, electricity, anything that could be substituted for the pluralistic variety of our world. But leaving *a priori* and sentimental preferences out, we must find what experience warrants us in saying in general about this variety. And the predicate of energy is at least more fruitful than the medieval, lexicographical predicate of being. It furnishes a methodological postulate without which science is impossible, and a program which can be filled out by scientific research. This methodological advantage of the concept of energy is stated clearly in Professor More's summary of Rankine, the founder of the science of energetics: "Instead of supposing the various physical phenomena to be constituted, in an occult way, of modifications of motion and force, he attempts to frame laws which shall embrace the properties common to any one class. He finds energy, or the capacity to effect changes, to be the common characteristic of the various states of matter to which the several branches of physics relate. If we then frame general laws regarding energy, we shall be able to apply them with

appropriate changes to every branch of physics. In all cases we have a certain quantity of energy active in a definite manner. Our aim should be to find by experiment the properties of any such manifestation, and to combine all common properties by general mathematical laws."[1] This principle of Rankine can be extended, we believe, to the whole field of reality, including organic and psychic changes, however difficult it may be in the latter cases to formulate our results in exact mathematical terms. Wherever you have knowable entities, whatever their stuff may be, there you must have equivalencies in the way of predictable differences. Only in so far are they knowable. We must know reality by the differences which it makes to our practical conduct.

The Postulates of Energy Systems

Our energy systems are cross sections of reality in the service of our special purposes. They are pragmatic, but that does not mean that they are unreal. They are real just insofar as they are based upon genuine characteristics. In analyzing any such system there are certain general postulates holding for all systems: there must be certain variables, there must be the form or organizing relation of the system, and there must be recurrence. Recurrence is the pragmatic equivalent of what an older metaphysics spoke of as substance. We must now try to illustrate the working of these postulates in some typical energy systems.

In a mechanical system, such as that of ordinary kinetic energy, we have three independent variables: gravitation mass, space units, and temporal units. For purposes of social description, these variables must be standardized. We ascertain the gravitation mass at a certain location on the earth's surface, Paris for example. We standardize our space units in terms of some common measure, kept at a certain constant temperature, whether it be the steel yard in London or the meter in Paris. We standardize our temporal units in terms of sidereal time, and our clocks are so regulated. These units are constant for practical purposes, but they are at best pragmatic measures. The mass of the earth, sidereal time, and our conventional space measures are all undergoing variations, but so long as they serve our common purposes, we can ignore such variations. If all bodies in space varied correspondingly, owing to motion or electromagnetic action, we should not be able to detect it. But since the quantities measured and the measure would vary together, we should not be practically affected by this universal relativity. Furthermore, our simple mechanical system has form. It is uniquely determined by the three factors mentioned, *viz.* gravitation, space, and time units. It is statable in terms of a

[1] *Hibbert Journal*, July, 1909, p. 785. The views of Rankine are to be found in a memoir read before the Philosophical Society of Glasgow in 1855.

simple formula: ?MV^2, where M stands for mass, and V for velocity. And, finally, while we live in a world of constant flux, and try to steer our behavior in such a flux, the system in question repeats itself in such a way that we can use the same formula again and again under the stated conditions.

In a more complex material system, such as a chemical system, we can analyze the system into the same elementary postulates. If we wish to explain the compound, water, for example, we must take account of the variables – the properties of hydrogen and oxygen, and of temperature. We state the organizing relation asH_2O, the combining proportion of hydrogen and oxygen. And once we have standardized the factors, we are able to repeat the formula so long as the conditions on our earth remain fairly uniform, *i.e.* for all practical purposes.

In analyzing electrical systems, we do not seem to be able to use gravitation mass as one of our variables. It seems to be empirically true that charging a metal bar with any amount of electricity does not alter its weight. But science has found other variables no less clear and definite. We know electrical energy, as we do mechanical, by the work it does. "The presence of an electric current is recognized by three qualities or powers: (1) by the production of a magnetic field, (2) in the case of conduction currents, by the production of heat in the conductor, and (3) if the conductor is an electrolyte and the current unidirectional, by the occurrence of chemical decomposition in it. An electric current may also be regarded as the result of a movement of electricity across each section of the current, and is then measured by the quantity conveyed per unit of time."[2]

In electrical energy, as in mechanical, we are able to apply our three postulates. We have certain variables, a certain form which is mathematically statable, and we have recurrence. "A current flows in a circuit by virtue of an electromotive force, and the numerical relation between the current and the electromotive force is determined by three qualities of the circuit called respectively, its resistance, inductance, and capacity."[3] In the case of continuous, unidirectional conduction currents, the resistance of the circuit is the only one of the above mentioned qualities of which we need to take account. The relation of electric motion to this is formulated as Ohm's law, "which states that the numerical value of the current is obtained as the quotient of the electromotive force by a certain constant of the circuit called its resistance, which is a function of the geometrical form of the circuit, of its nature, *i.e.* material, and of its temperature, but is independent of the electromotive force or current."[4] "We may otherwise define the resistance of a

[2] Article, "Electrokinetics," *Encyclopaedia Britannica*, 11th ed., Vol. IX, p. 211.

[3] *Ibid.* p. 211.

[4] *Ibid.*

circuit by saying that it is that physical quality of it in virtue of which energy is dissipated as heat in the circuit when energy flows through it."[5] When we deal with alternating or periodic currents we have to take into account inductance as well as resistance. Inductance "may be defined as that quality in virtue of which energy is stored up in connection with the circuit in a magnetic form. It can be experimentally shown that a current cannot be created instantaneously in a circuit by any finite electromotive force, and that when once created, it cannot be annihilated instantaneously. The circuit possesses a quality analogous to the inertia of matter. If a current, *i*, is flowing in a circuit at any moment, the energy stored in connection with the circuit is measured by ?Li^2, where L, the inductance of the current, is related to the current in the same manner as the quantity called the *mass* of a body is related to the velocity in the expression for the ordinary kinetic energy, *viz.* ?MV^2. The rate at which this conserved energy varies with the current is called the 'electrokinetic momentum' of this circuit (= Li). Physically interpreted this quantity signifies the number of lines of magnetic flux due to the current itself which are self-linked with its own circuit."[6] In electrical energy, therefore, as in ordinary mechanical energy, we can define the variables involved in its activity, we can state its organizing relation in terms of simple mathematical formulae, and we can predict the future for practical purposes under the stated conditions.

If, again, we take an organic system, we find that we can deal with this on the basis of the same postulates. Here too we have our variables, our organizing relation, and recurrence. Life, complex as it is, is after all, a chemical compound. "Protoplasm, the living material, contains only a few elements, all of which are extremely common, and none of which is peculiar to it. These elements, however, form compounds characteristic of living substance and for the most part peculiar to it." Of such elements, the most significant is proteid, consisting of carbon, hydrogen, oxygen, nitrogen, and sulphur. Among other elements are such organic compounds as fats, carbohydrates, and various inorganic substances such as salts and water. "We attain, therefore, our first generalized description of life as the property, or peculiar quality of a substance composed of none but the more common elements, but of these elements grouped in various ways to form compounds ranging from proteid, the most complex of known substances, to the simplest salts. The living substance, moreover, has its mixture of elaborate and simple compounds associated in a fashion that is peculiar.... Life is not a sum of the qualities of the chemical elements contained in protoplasm, but a function first of the peculiar architecture of the mixture, and then of the higher complexity

[5] *Ibid*. p. 212.

[6] *Ibid*.

of the compounds contained in the mixture. The qualities of water are no sum of the qualities of hydrogen and oxygen, and still less can we expect to explain the qualities of life without regard to the immense complexity of the living substance."[7] It is true that the synthetic chemist has not been able to account for the origin of protoplasm by artificial manufacture from the known ingredients, but this, he feels, is due to the fact that he has not yet discovered the unique conditions of temperature, pressure, etc. which were present at the geologic origin of life. In any case his ignorance would not be helped by assuming another element such as vital impulse. Vitalism seems to be laboring under the confusion of trying to account for the unique organizing relation as a discrete element in the compound, which is like introducing a water impulse to account for the unique properties of water.

What impresses us about such an energy system as life is not so much the variables of composition, concentration, temperature, etc., as the architecture or organization. What baffles us when we try to characterize life is that the elementary properties we may enumerate may be found singly in other and simpler systems. Just as we cannot point out a unique element in the composition of life, so it is difficult to point out a unique property. Does living matter grow by intussusception as opposed to superficial addition? So do inorganic liquids, as when a soluble substance is added. Is living matter irritable? It is easy to find inorganic matter which is sensitive to specific stimulation. The camera film is far more sensitive than our eye; the resonator than the ear, etc. As regards instability, if we use Spencer's formula that "life is the continuous adjustment of internal relations to external relations," we can parallel the readjustments in the case of life with those of inorganic nature. In either case, the action of the stimulus is complicated by the organization of the system and its potential energy. As regards mobility, so far as that is characteristic of life, the Brownian movement is the very image of perpetual mobility, and was first mistaken for a living compound. So we might parallel simple reproduction by "the breaking up of a drop of mercury into a number of droplets." Cumulative disposition and differential action on the basis of it can be paralleled in the inorganic world. Nor are discriminative selection and reaction upon a type peculiarities of the organic world. And, finally, the inorganic world acts in accordance with the principles of logic and mathematics, even though it may not be conscious of so doing. If you take the whole range of organic action, therefore, you could doubtless parallel the various properties and functions in the inorganic world. In the large, too, the latter reveals such selective adaptation and compensation in its moving equilibrium as would require an "omniscient demon" to establish. The uniqueness of life lies in the fact, long ago pointed out by Fechner, that life in its evolution brings together

[7] The quotations are from Dr. P. C. Mitchell's article, "Life," in *Encyclopaedia Britannica*, 11th ed.

and correlates, into one unique ensemble, a vast array of properties, which are scattered in nature. This ensemble has unique properties of its own, new ways of storing potential energy, and new modes of behavior. No theory of the origin of life or its relation to antecedent evolutionary stages can affect the uniqueness of the system itself. Nor must we regard its spontaneous or uncertain character, for our limited powers of prediction, as a peculiar merit. For, in the first place, this is due largely to our ignorance; in the second place, we value conduct because it is dependable as well as because it is novel. We prefer people who are invariably truthful, honest, just, and kind to those who are liable to do anything whatsoever.

If we, finally, take up the most complex type of energetic system with which we are familiar, *viz.* that of social interactions, we must here too apply the same postulates. We must discover the variables, the organizing relation, and the type of recurrence which we can predicate. We can abstract, for the purpose, from the material conditions, such as geographical configuration, temperature, water supply, character of the soil, etc., as well as from the organic conditions which form the background of the race, and deal with a social system as a closed system, as we have done in the other types. We may find analogies from the more elementary systems useful here. Sir Joseph Larmor, in speaking of a material system, says: "The amount of energy, defined in this sense by convertibility with mechanical work, which is contained in a material system, must be a function of its physical state and chemical constitution and its temperature."[8] Translating these categories into terms of society, we may say that the variables in a social system are the group conditions in the way of greater or less condensation of numbers, the mental constitution of the factors involved, and the common emotional excitement. Durkheim has oversimplified the problem when he tries to account for society in terms of volume (or number) and density, the definition of material mass. These have indeed their appropriateness. We find that volume is a variable involved in social conduct. The volume of suggestion makes it more effective. The number engaged in the action affects the conduct of the participants in an altered sense of responsibility and in the checks and releases that obtain. We find, too, that density or proximity has its corresponding effect. It gives a peculiar reality and vividness to the relation, which is particularly marked in crowd action. But these variables, if used in any limited sense, are not the only ones. To understand the psychic state or inertia, we must take account of the peculiar equilibrium at the time, within the group in which we wish to produce effects. This may be a static equilibrium in the way of habits and traditions, or a moving equilibrium in the way of certain tendencies which the group is striving to realize. In each case the sort of equilibrium that exists conditions our action. Timeliness of suggestion is important if we would accomplish

[8] Article on "Energetics," *Encyclopaedia Britannica*, 11th ed.

results. In an equilibrium moving in the opposite direction from our intent, we may find that hitting it laterally, or by indirect suggestion, encounters less inertia than hitting it head on. Again, as regards constitution, we find that we must take account of the individual characteristics of the components in the way of inherited and derived tendencies. The mental constitution conditions the type of action which we can expect. We must know our people, their race traits of instinct and temperament, and their psychological tendencies of needs, ambitions, and aversions. This is quite as necessary as knowing the elements which enter into the chemical compound. In either case, if we fail to take account of the reactive properties of our elements, we may find ourselves unwilling participants in an explosion. We must try to discover, too, the amount of emotional excitement which is necessary for the specific reaction to take place. Social compounds have their boiling point and freezing point, their point of solvency and crystallization, as truly as chemical elements. We must find what degree of affirmation or passion will precipitate the special type of reaction. As in the case of dynamite, the instability of the structure may make the effect out of all proportion to the releasing stimulus. Witness the present war of the European nations.

To understand a social kinetic system we must take account of the organizing relation, as well as the variables of its constitution. We must find the thought form, the ruling passion, the dominant purpose, which makes the tendencies converge in one direction, be the interaction between individuals within the group, between the individual and the group or between groups. Sometimes lust for power, sometimes love of wealth, sometimes self-preservation, sometimes racial prejudice, sometimes loyalty to truth and right form the organizing bond. But always there is a striving for unity and simplification, for a new equilibrium, and this gives direction to the struggling motives. And as in physical systems, the movement is direct or in a straight line, except as there are interferences to overcome or go around, so in the social system. In the end, ideal unities are the only ones which can succeed in giving an adequate and durable direction to the various claims. Unified action must be reasonable action.

In social systems, as in simpler systems, there must be such recurrence of traits and situations as makes prediction possible. The difference lies in the enormous complexity of the social situation. By means of statistics, we can, to a certain extent, eke out individual observation; and in regard to some types of reactions such as marriages, births, suicides, etc., our curves are fairly constant; or, at any rate, the deviations are clear. For understanding the deeper motives and effects of human conduct, we need historic perspective. But here, as in the simpler systems, the facts have their own perspective of which we must take account, relative though our interpretation must necessarily be, in virtue of the fact that history is potentially infinite and that interpretation is of the very essence of the creative human process.

In analyzing energy systems we have selected our illustrations from the kinetic state of energy. This is due partly to the fact that we found this procedure simpler, but more to the fact that this state of energy, is more significant for metaphysical purposes. The potential state, that of position or configuration, derives its significance from the moving state. By potential, we mean what energy *can* do when certain conditions are supplied which are different from those obtaining. Thus, to pass from energy of position to the kinetic state, there must, somehow, be unequal distribution of energy. In the case of falling bodies, we have unequal distribution of gravitational energy. Thermodynamics is built on the unequal distribution of heat. In the case of electrical energy, "if any cause operates to add or remove electrons at one point, there is an immediate diffusion of electrons to reëstablish equilibrium, and this electronic movement constitutes an electric current. This hypothesis explains the reason for the identity between the laws of diffusion of matter, of heat, and of electricity. Electromotive force is then any cause making, or tending to make, an inequality of electronic density in conductors, and may arise from differences in temperature, *i.e.* thermo-electromotive force, or from chemical action when part of the circuit is an electrolytic conductor, or from the movement of lines of electromagnetic force across the conductor."[9] In the case of social systems, it would be a case of the unequal distribution of emotional-volitional excitement.

In the potential state, energy is just as real as in the kinetic state, but is balanced or in equilibrium for the time being. In the case of a building supported on pillars, the energy of the pillars balances, for the time being, the gravitational energy. In the case of human actions, certain tendencies to action are balanced for the time being by inhibitions. A man would steal, but he is afraid of the police. In either case, when the balancing energy is withdrawn, we have an unequal distribution, and the persistent tendency becomes kinetic energy.

The term potential, however, is sometimes used when we contrast expectancies under one set of kinetic conditions with those under another set. Certain electric vibrations can become sensations of light to us when they act upon a photochemic retina; and certain air vibrations can become sensations of sound when they strike our ear and are transmitted to our cortical centers. Here the contrast is not between energy of configuration and energy of motion, but between what happens in the case of different reagents. In any case, the properties which are observed in certain contexts cannot be said to preexist independent of the contexts as was supposed by Anaxagoras, for example. According to him, the fruit of Demeter which we eat, and the water which we drink must contain the germs of blood and tissue and bone and hair which they serve to build up. The reason that things can produce

[9] Article on "Electrokinetics," *Encyclopaedia Britannica*, 11th ed.

such different results in different combinations is that everything contains a portion of everything. It is only the proportion of the properties which varies, and which determines the character of the particular thing. If pain is present in stimuli of a great intensity, then it must be a latent property at any intensity. But potential is not a category of the actual world, but of our social expectancy. The chicken is not present in the fresh egg at all. It would be nauseating to think so. Knowing that certain properties appear in certain energy systems, we can predict that they will recur when the conditions are repeated, but they are only real within the system.

Potential energy, therefore, is not to be regarded as a distinct type, to be set over against such types as material and electrical systems. It is rather a set of expectancies which we may have in regard to any type when we contrast one condition with other conditions. We may contrast the condition of balance or equilibrium with work done when the special type of energy exists in a kinetic state; or we may contrast the work done under one set of kinetic conditions with that done under another set. Nature obviously does not know the word potential. It is a contrast which is contributed by our mind. In reality each reactive relation is uniquely determined, – in the case of material systems, by such characteristics as the physical state, chemical composition, and temperature, by geometrical pattern and direction, by cumulative numerical values, and by distance. Potential is not a characteristic which figures in the determinations of a system. The tendency to read our expectancies into reality as though they existed prior to and independent of the dynamic situation is only another instance of the pathetic fallacy.

Some Empirical Laws of Energy

We have dealt so far with different types of energy systems and the factors which determine such systems. While each type of system must be taken as unique and its specific characteristics observed, there are some characteristics which seem to hold for all systems of energy. Beside the general postulates of variable, form, and recurrence which hold for all systems, there are certain empirical postulates which pertain to energy systems in particular. These general characteristics are sometimes called laws, though this is somewhat of a misnomer since they have only been verified for some limited systems. One of these is the law of conservation of energy and closely associated with this is the conservation of mass. The law of conservation of energy has definite meaning when we deal with special energy systems. In a material system, for example, it signifies that when a certain amount of energy disappears as motion, it reappears as heat; and the quantity of heat is equivalent to the lost motion, though from the point of view of available energy it is only in part convertible into motion. It is equally easy to show the meaning of the law in the case of an electrical system of energy. Energy which disappears as

electricity is found to reappear in the equivalencies of mechanical motion, chemical decomposition, or heat. In organic and social systems it is difficult to ascertain exact equivalencies in the complexity of changes involved. But here, too, we can in part, at any rate, note such equivalencies. In fact it was in connection with the potentials of foodstuffs in their relation to physiological activity, that Mayer first suggested the law, which was afterwards tested for material and electrical energies by Joule. It is clear that in organic and mental work there is a relation between nourishment and work done; there is also an equivalent in the way of heat as energy is used up. The heat of the skull, in the case of mental activity, is found to increase, and can be measured, though that of course is only one of the equivalents of mental work. Here as in mechanical energy, we must take account of the going on of the impulse itself and its effects in kind, which it would not seem possible to measure in an exact way. When you try to state the law of conservation of energy as true of all systems, Poincaré is quite right that it is necessarily vague. It signifies that there is some sort of constancy, that there are equivalencies, but it furnishes no definite content. Even so, however, it has more meaning than the old barren formula of identity in difference.

The law of conservation of mass or inertia is similarly empirical. It has been verified for some of the simpler systems of energy. Gravitational mass can be taken as practically constant at a certain point of the earth's surface. In the case of electrical mass we can measure the inertia of the current or electromagnetic field. In the more complex forms of energy, such as the organic and social systems, we are equally aware of the reality of inertia, and must deal with it, though we have no exact way of measuring it. We know, in any case, that inertia varies with motion. A moving body presents a different inertia from a body at rest. In the case of high velocities, approximating the velocity of light, there is a sudden increase of mass. Mass also varies with direction. A body in motion presents greater inertia to a body moving in the opposite direction than to a lateral impulse. This is equally true of the inertia of material bodies, of electric currents, and of social inertia. The constancy of mass in any case is a pragmatic affair.

Another characteristic, which seems to be practically general so far as our observation is able to go, has been called the law of degradation of energy. There is a tendency for energy to move from a higher to a lower potential. Since activity depends upon an unequal distribution of potentials, there would seem to be a tendency for the available energy to decrease, and for the universe to run down. This is particularly noticeable in connection with the constant tendency for a certain amount of energy to be dissipated as heat which can only in part be made available; but it holds wherever there are uncompensated expenditures of energy. This law does not contradict the law of conservation of energy since the sum total of energy would still remain constant, even if all available energy were diffused into random molecular

motions, such as we observe energy seems to be inevitable in the Brownian movement. While the degradation of energy seems to be inevitable, from the point of view of our limited survey and control, it cannot be regarded as an ultimate law of the universe. The Greeks with inferior tools, but a superior imagination, realized this. In the words of Empedodes: "For if they (the elements) have been passing away continually, they would not be now."[10] Maxwell showed that an omniscient demon, by sorting all the greater velocities on one side of an imaginary partition, and all the lesser velocities on the other side, could create new available energy. "This shows that the principle of the dissipation of energy has control over the actions of those agents only, whose faculties are too gross to enable them to grapple individually with the minute portions of matter which are the seat of energy."[11] If the universe is infinite in time, there must be some compensating agency corresponding to Maxwell's omniscient demon which keeps the universe wound up. It remains true, nevertheless, that for our practical purposes energy systems are in part, at any rate, irreversible.

Any postulate, which is based on a one way process, – such as the law of equilibrium, the law of least stress, Spencer's law of evolution as a passing from homogeneity to heterogeneity, with a corresponding dissipation of motion, – can only have significance for limited systems within our experience. If we apply them to reality in its wholeness, without compensation, they imply a finite beginning and end of our world. In an infinite past, any one way process of finite changes must have run its course innumerable ages ago.

Another characteristic which seems to be universal is that of rhythm. We have long been familiar with the rhythmic character of some of the large movements that give us the periodicity which is the basis of our time measurements, whether in the rhythmic functions of the organism or of our astronomic system. We have observed, too, the rhythm in the evolution of life forms where periods of stability seem to alternate with periods of mutation; and we are familiar with a similar rhythm in the social history of the race. It is only recently, however, that Planck's theory of quanta has called our attention to the same rhythmic character in the more minute and simpler systems of energy where we seem to observe the systole and diastole of nature's heart. Energy seems to proceed by finite drops rather than by continuous and infinitesimal gradations. Moments of potential and active energy alternate. It is also discontinuous as regards the quantitative conditions of its activity. Effects of a characteristic kind take place only when a certain threshold of inertia has been overcome. This is illustrated in the physiological realm by Weber's law, which formulates the fact that certain differ-

[10] Burnet's translation, line 90.

[11] *Encyclopaedia Britannica*, 11th ed., article, "Energy."

ences in sensation can be perceived only when the stimulus is increased by a definite ratio of the previous amount.

We have seen that relativity is a fundamental characteristic of energy systems. Properties vary with the system. We can speak of no properties in the abstract. Our standards of measurement are subject to variation no less than the things measured. For practical purposes, we standardize our units of measurement by making the conditions as stable as we can. But at best the conditions of which we can take account are limited. If our standards and the things to be measured vary alike with reference to conditions outside of our observation, we are necessarily ignorant of such variations, and for practical purposes they do not concern us. But theoretically the thought is uncanny and disquieting. We know of no absolute position in space or absolute system of relations. Motion is for us relative to a limited system of positions which we have selected for provisional purposes. Our generalizations, whether of facts or values, are circumscribed by the relative systems of our experience. Our standards of measurement, whether of energy, time, or space, are all alike pragmatic. They are conveniences within the particular conditions with which we happen to deal. And so long as we can find our way and perform our common tasks on the basis of them, they are practically valid. This does not mean absolute agnosticism, since such properties as we experience, and such relative relations as we can observe, must be real in any case, however fragmentary they may be, and however much more intelligible they might become in more comprehensive systems. Nor does relativity mean neutralism. It is only our intellectual abstractions that are neutral. Things for us must be known as ensembles of properties within energy systems. As such, they do real work. When we speak of activity as the common characteristic of all our real systems, it is not the abstract concept of activity which does work, but activity as uniquely determined within the special system with its movement and form. Neutralism is the emasculated ghost of the old superstition of abstract, independent entities, – the grin without the old metaphysical cat of inert substance, but none the less reminiscent of that beast. Not even mathematical entities have any meaning except as predicative functions within a system, though here the system is analytic, determined purely by our assumed initial postulates. Energetic systems are empirical. Their properties must be discovered *a posteriori*.

The Relation of Energy Systems to One Another

It is the custom of science to deal with systems of energy as closed systems. We have seen, however, that certain characteristics overlap and seem to hold for all energy systems. The question naturally arises as to the relation of these systems to one another. Can we find a common denominator? Science deals with special systems and their characteristics. The transition from one system

to another – from gases to liquids and solids, from the chemical elements to their compounds, from material systems to electrical and mental systems, with the unique ensemble of properties in each case – science takes as a matter of fact. It recognizes the discontinuities in nature as well as the continuities. Whether we are concerned with conditions that are under our control, as in the production of the compound, water, from hydrogen and oxygen in the chemical laboratory, or with conditions antecedent to our experience by vast geologic ages, and still unknown to us, as in the case of the compound, life, science accepts new beginnings as facts, and observes and catalogues the characteristics of the new system as best it can.

Philosophy cannot know more than science about matters with which science deals. It has no business to stick to inert substance when science has found the conception of energy the more fruitful one. It has no right to pass upon the facts or theories of science so far as these are based on experience, and found serviceable in meeting our practical problems. But it is the province of philosophy to try to understand science by correlating its results with each other, and with the permanent demands of the race.

It would seem, in the first place, that creative synthesis is of the very nature of reality. We must accept the new qualities and values as gifts, whether it be the compounding of mechanical forces in a new direction, or the properties of chemical compounds, or a new life unity, or a new social bond. In each case, we must take account of the properties unique to the specific situation, as well as observe the persisting constants. In each case, we must follow the lead of experience, and shape our theories accordingly. Each energy system with its properties must be taken as real. It has just such properties and relations as are manifest in the system, whether they be the simpler properties of material systems, or the more complex properties of such systems as life and mind. There is nothing occult about energy, except as our ignorance makes it so.

In the second place, systems of energy, as we find them in the real world, overlap. There are no closed systems except for our abstract purposes of description. They make definite differences to each other. They interpenetrate and interlock into one energetic world. Energies, throughout the complexities of systems, retain their primal property of doing work. They are ever expended into other energies and reimbursed from them in the great clearing house of nature. The cleavages are of our own making. They are due to our assumptions, not to reality. When, for example, science held to the hypothesis of inert substances, acting on each other by impact – inert, extended, material substances and inert, non-extended, mental substances – as its working model of reality, it was difficult to see how material energy could in any way make a difference to mental. It would be equally difficult to see how it could make any difference to electrical systems, where likewise molecular models do not seem to apply. In either case, we should have to invoke parallelism with its

absurd results to bolster up our initial assumptions. But our intellectual models cannot alter the facts. The real units of reality, we have seen, are not inert entities, but energy systems, in one type of which material properties constitute a differential characteristic. The energetic conception of reality leaves us free to follow the lead of the facts, and to recognize such continuities and discontinuities, such uniqueness and interdependence as we find. Electricity gives rise to mechanical and chemical changes; and they, in turn, serve to liberate electricity; and while the latter is more subtile and pervasive, it is the material world which canalizes our electrical energies and makes them serviceable. Plant life is dependent upon the material systems for nutriment and framework, and upon light and heat for the processes of assimilation and growth. The mental type of system leans upon the material and organic systems. It requires proper nutriment, proper conditions of temperature and light, proper bodily position, proper rhythms of rest, in order to do its work, not to mention its dependence upon neural structure. It is clear that it is the more complex systems that overlap and are correspondingly dependent upon simpler systems. Heat would seem to be the lowest and most amorphous type of energy from our point of view, as the more complex energies seem to be dissipated as heat, and thus seemingly lost as available energy. But as we have already pointed out, this can hold only for our limited perspective and powers of control.

Reality reveals itself in many systems. It is matter, it is light, it is electricity, it is mind, it is truth, right, and beauty. It is all of these and many others. All the varying phases belong to it, and one is no more real than the other. It is "day and night, winter and summer, war and peace, satiety and hunger; but it takes various shapes, just as fire, when it is mingled with different incenses, is named according to the savor of each."[12] The more complex systems furnish a greater variety of properties, but however imposing they may be, they must trail along and draw their sustenance from the simpler, even as the ivy trails along and draws its sustenance from the soil. While the more complex systems logically overlap the simpler, which they presuppose as conditions and instruments, this does not mean that the simpler have no existence of their own, but are always dissolved or taken up into the more complex. When they are so taken up, they cease to exist as simpler. Water, as an individual compound, has definite, characteristic properties; while water, taken up into other compounds, inorganic and organic, is no longer water. It has lost its individuality. But the water that satisfies thirst, with many other unique properties, has claims of its own. We do not want it merely abrogated into more complex systems. We would not want to drink water that has entered as a constituent into blood, or let the children play with water that has been taken up into nitroglycerine. In the economy of the whole, one

[12] Adaptation of Heraclitus, fr. 36, Burnet's translation.

system cannot be said to be more necessary or real than the rest. Here, at any rate, the words of Browning hold:

> "* * * Nor soul helps flesh
> More now, than flesh helps soul."

Of each, we must say, in characterizing reality: "That art thou." There is no substrate except the interlocking, interdependent energies; no unity, except the form of each, and of the multicolored whole.

The passion for simplicity, however, is incurably rooted in the human mind, and there will always be the attempt to reduce the concrete variety of the world into some primordial system, be it matter, electricity, or mind. This seems a mistaken and fruitless quest. We must adhere to the pragmatic postulate without which we could not proceed at all, *viz.* that reality is what it manifests itself to be in its varying contexts. The process is fundamentally a creative process. It is not a shuffling of neutral entities. The properties are combining properties; they are uniquely determined by the system. We have no right to dogmatize, whether in reading backward from the more complex systems to the simpler ones, or forward from the simpler to the more complex. We must find our way on the basis of experience and take reality as it exists at each stage of complexity.

We can, indeed, classify systems on the basis of common and differential traits; and we find that some can be treated as varieties of one species. Thus it has been found that electricity, light, radiant heat, and magnetism can be successfully dealt with on the basis of a common electronic theory, though their differentia are no less significant than before. It has been suggested that nervous energy may be reduced to the electrical type. Says Professor Gotch: "Physiology has definite grounds for believing that, as far as present knowledge goes, both the production and cessation of central nervous discharges are the expression of propagated changes, and that these changes reveal themselves as physico-chemical changes of an electrolytic character. The nervous process, which rightly seems to us so recondite, does not, in the light of this conception, owe its physiological mystery to a new form of energy, but to a circumstance that a mode of energy displayed in the non-living world occurs in colloidal electrolytic structures of great chemical complexity." While science thus seems to have succeeded in simplifying large domains of facts, so long seemingly heterogeneous, it has also discovered new varieties and complexities which challenge further reduction and corresponding overhauling of old categories, as in the case of radioactive energies. For pragmatic purposes, three general types of systems would seem to stand out – the material type of system with its differentia of gravitational mass and molecular motion; the electrical type of system with the electron as its energy unit; and the mental type of system where conative tendency, with its possi-

bilities of consciously directed action, cognition, and appreciation, is fundamental. But such a classification is purely a matter of convenience, and throws no light upon the process itself.

We seem to get more light when we take the evolutionary point of view. No doubt our systems of energy, as we observe them to-day, are the result of a long process of selection and survival. Darwin showed this in a classic way for the organic type of system. It is equally clear for the more complex mental systems, on the basis of which we must understand human history. Nor does the inorganic world lie outside this evolutionary conception. The properties of matter, the distribution and concentration of the elements, and the stability of the present material structure – these are all the result of a selective survival process. It does not seem probable that this marvelous adaptation of the material system to telescope into and form a fit environment for more complex systems such as life, can be accounted for on the basis of mere chance.'[13] It is "more congenial" to our mind, to use Poincaré's phrase, to assume intelligent selection within the process, however much such selection may surpass our faculties. That systems exist at all – relationships of processes statable in terms of a few simple principles – would seem in itself, as Newton long ago pointed out, an indication of rational emphasis within the world of which our reason is a part.

While the empirical generalizations about evolution must always have significance for our reading of reality, their metaphysical interpretation is often confused. Here the mechanical tendency of the human mind has come in to vitiate the reading. While we can trace a sequence from simpler to more complex systems, within a given series, we cannot say, therefore, that the properties of the more complex systems are compounded out of the properties of the simpler ones. If complex life-systems have evolved from unicellular organisms, it does not follow that they are a mere mechanical combination of the simpler organisms. New properties have been developed as a result of the organization, differentiation, and selection within the process, in its adaptation to a larger environment. These properties must be taken for what they are in each stage of development.

Owing to the early progress, as well as to the convenience, of mechanical science, it was natural that material systems should come to be emphasized as the essential type of reality, and that the more complex systems should be regarded as compounded out of material properties. But while we must recognize material properties as real within the systems where we find them, we have no reason to regard them as any more real than the unique properties or ensembles of properties which appear in more complex systems, such as life and mind. Even if the material type of system were absolutely earlier, it

[13] See in this connection "The Fitness of the Environment," by Professor Lawrence Henderson.

would not follow that it is more real. As a matter of fact, the material type of system is just as much an evolution as the organic type. And while, in our limited series of geological evolution, the material system had to evolve to a certain stage before life forms could appear, the two types of systems have for long ages evolved together and a corresponding fitness been established. Nor does it follow from the temporal antecedence of the material properties that they could give rise to the properties of the more complex systems, or that the material properties are of greater importance in understanding reality. The real energies which we deal with in evolution have other potentialities than material properties; and it is these potentialities that come to light in the creative process of the universe. It is not the properties of extension, weight, cohesiveness, etc., which constitute life, though they are present, and form an important index to our description of life processes. Life is characterized by the ensemble of properties which is unique to its own system and which cannot be said to exist at all in material systems. The properties of the simple systems must be treated as instrumental when we deal with the more complex systems. They are, as it were, handles or signs, by means of which we can lay hold of and, to a certain extent, describe and control the conditions of the more complex systems. Thus we are able to produce a chemical compound with its new properties, once we know the constituent elements and the proper conditions of temperature, etc. Thus the great nature chemist was able to produce, through the energies of a seemingly dead world, the properties of life; but the deadness exists only in our intellectualistic misconceptions. To try to account for life as a compound of material properties is as reasonable as to try to account for the characteristic thinking of a man on the basis of his size and weight. These are indeed important for certain kinds of behavior of human beings – getting a suit of clothes for example – but they do not as such account for their thinking.

The electrical theory is subject to the same criticism as the old material atomism. We cannot account for matter as a mere arithmetic sum of negative electric charges any more than we can account for life as a sum of material properties. The material atom is, on any theory, a unique system with its own combining relations with other atoms, its own unique properties, which are not the properties of free electrons; and adding an unknown element of positive electricity does not clarify the situation, any more than adding vital impulse to a material system explains life. Whether such an element is proved to exist or not, we should still have to take account of the concrete system of matter itself with its concentration, pattern, durability, and reactive properties. On any theory, the material system is uniquely real; and we must take the characteristics as they exist in the system itself. There is indeed an interesting analogy, as pointed out by J. J. Thomson and others, between the figures assumed by magnets in an electrodynamic field and the periodic law of the elements. But mathematical laws sometimes hold for decidedly disparate

systems. Witness the formula for kinetic energy. The different conductivity of different elements would not prove, any more than disprove an electrical substrate. A man carrying a log is not necessarily a log. Even if the characteristic properties of matter, such as extension and weight, can be simplified for purposes of description by being stated in terms of motion and distance, or if the material atom can be regarded for certain purposes as a halfway house for treating facts which are further dissociable into electric charges with their particular and constellation velocities, it still remains true that extension and weight are practical determinants which matter does possess, and which electric charges, as we ordinarily understand them, do not possess.

To try, again, to account for matter as mind, – "degraded" or "estranged" mind, "mind hide-bound with habit," – is at best a confusing use of language. Material systems do *not* have the properties of mental systems. They are as unique as the latter and have their own claims to reality. They are not dignified one whit by being associated with the name of mind. There is no reason, moreover, for using opprobrious epithets about matter. It has its own place and importance in the economy of reality. It is the unique distribution, concentration, and durability of the material world which makes possible the more complex systems of life and mind. Through the correlative evolution of matter, reality makes possible that other series of evolution which terminates in significant and appreciative reactions to the world The material and vegetative systems furnish the stored-up energy, the stable frame, the means of canalization of the more subtle energies. They furnish the tools, – direct in our bodily movements, indirect in the case of material instruments, – which make intelligent behavior possible.

There is one sense in which we can speak of the more complex systems as higher and more real. They reveal more fully the potencies, the actuality of the world of energies in which we live and move and have our being. They overlap logically. They imply the simpler systems, such as the material and electrical, as their background and instruments. They indicate, in a more concrete way, the direction, the formal organization of the larger world, the system of systems, from which our fragmentary systems are abstractions. It is because this system of systems, with its potencies and form, interpenetrates the humblest parts of the universe, and gives direction to the whole, that it seems as though the simpler systems produced the more complex. But what we call "matter" is more than matter. The seemingly inert energies of our world are fraught with infinite potentialities as they enter into the more and more complex systems, and yield up the for-us hidden properties, in the stress of heat, in electrolysis, in organic assimilation, in the emotional excitement of mind associations. We may well say with Browning:

> "Well, this cold clay clod was man's heart:
> Crumble it, and what comes next? Is it God?"

In the case of one system, the various systems do indeed converge into one unique relation so far as we are concerned. And that is in the cognitive system. It is mere tautology to say that for us to speak of energies they must first be known. In so far as known, they are indeed uniquely determined by the cognitive relation. But it is a false assumption to suppose that our *knowing* the forms and properties of systems constitutes their existence. We can know the systems *because* they exist and have a certain form and certain properties. This is as true of our own past as of the Milky Way. Our taking account of them is an afterthought. It does not alter the unique systems of which we take account. The stellar system, the properties of our material environment, the reactive properties of plants, the civilization of Greece, existed – they had their own properties and form – long before we took account of them. Hence, we can abstract from our personal perspectives and socialize them. We socialize our space orientation, which in the first instance depends upon the organism and its needs. To make intelligible our fleeting perceptions, we interpolate our gravitational and electrical systems. We discover their properties and mathematical form. In mental systems, we have again a unique reality which we must try to understand. Only in such systems is the ensemble of properties known as values possible. These systems are indisputably real when they exist, and are irreducible to other systems. They are "the master light of all our seeing."

In these conscious mental continuities, reality reveals to us, not only the formal relations which we discover and retrace as truth, but the demand for justice, the property to have mercy, the response of beauty. This is true not only in our human relations, but still more in those higher continuities which we call communion with God. These higher contexts must be taken to reveal the nature of reality, quite as truly as the simpler contexts which we deal with in mechanics. Each system makes its own unique creative contribution; each system furnishes a solution in which reality shows more of its reactive properties. Thus electrical systems reveal properties which lie outside our material systems. In the chemistry of the organic systems, we find marvelous powers of assimilation and response, which, so far, lie beyond our artificial imitation. In our mental systems, with their greater capacity for storing up potential energy in the way of inhibitions and facilitations of behavior, this complexity of properties increases still more. It is here that the unique responses of value arise as creative additions to our world. These are as much a part of the reality of the world as the chemical responses. They constitute for us its choicest part. The universe, in its varying systems of creativeness, calls to our mind the Chinese swallow which gives us our edible nests. First it produces a nest of largely external material and contributes but little of its substance to the frame. In its second building, after being deprived of its first nest, it labors harder and secretes more of itself. In the third nest, in the pain and anxiety of frustration, it yields up its very lifeblood and

colors the nest with its crimson. So in the rare solutions of our intense emotional excitement, the energy of the universe, in the pain and stress of clashing interests and the threatened defeat of its ideal instincts, contributes its very soul as it labors to give birth to new values, and colors the gray world of matter with its rainbow glory. Here the systems of the universe not only exist but have significance.

And who shall say that our limited mental systems are the last word of reality's revelation? The energy which shows its marvelous properties in all these systems and which, even in the simplest, reveals a sublimity which humbles our power and insight, may well be capable of higher creative syntheses, more comprehensive actualities and insights than those associated with our organisms and our social institutions. That such a synthesis is real, we have intimation in the vast correlative adjustments of nature of which we get glimpses in science, and in those instinctive demands for harmony and beauty which make themselves but feebly felt in us. We can see and appreciate but piecemeal and in the dark glass of our prejudices. The directive power of the universe of which we have intimations in our higher continuities no doubt has a more adequate way. In the meantime we must have faith in our own insight, relative though it be.

In this brief survey of energy, we have implied throughout other categories than energy properties. Only so could we understand energy in action or as doing work. Otherwise it would be congealed, – frozen energy. We have implied geometrical properties and time properties which must figure in energy systems. We have also implied form, without which energy systems would be insatiable. Elsewhere we have given more adequate consideration to these characteristics. We must here turn to a further analysis of energy properties, as they appear in the world of things and minds.

BIOGRAPHICAL

John Elof Boodin. "Biographical." *Contemporary American Philosophy: Personal Statements*, ed. George P. Adams and William P. Montague (New York: Macmillan, 1930), vol. 1, pp. 136–142.

What is a life? No one knows. It emerges from the darkness like a meteor, makes a transient trail and disappears into the darkness again. What has philosophy to do with life? Sometimes philosophy is an expression of life, but more often it is make-belief, a compensation for the failure of life. An autobiography of spirit must at best be an after-thought and is of doubtful value. If I could point to a master, or masters, as the source of my philosophy, the task would be simple. But I can call no man master, though I have learned from many masters. What I have done is the result of a lifetime of meditation with its significant moments now and then, for the most part too fleeting and too much a part of the texture of life to receive a date.

I was born on a farm in the parish of Pjetteryd in the picturesque highlands of Southern Sweden. My ancestors had lived in that neighborhood for generations and had been leading citizens, but their education had not extended beyond the parish schools. The clergyman's children were the only ones who went away to college. My father owned a considerable estate with a large pine forest, and would have been prosperous had his family not been so large. He married a second time in middle life, and I was the child of a young mother and a father advanced in years. I was nurtured on the Bible and the legends of the place. There were the groves and altars of the old Stone Age and there was the much older background of the trolls that lived once in the hills and in the bordering lake. My father told me the folklore of the place as his mother had told it to him, leaving my child's fancy free. Thus I learned respect for time.

I helped in the work on the farm until I was fourteen, and learned to love nature and respect the processes of nature, with its seasons of seed-time and harvest. There was not much machinery and the contact with nature was intimate. Through this training I became an empirical realist. I also learned the law of mutual aid. My parents were a sort of Providence to the neighborhood, looking after the poor, the sick, and the dying, and I was the messenger boy. They were people of simple piety who believed that nature and man are included in a beneficent personal order in which there were evil forces as well as good, but the good prevailed. In this way I probably laid the

unconscious foundation of a cosmic idealism. I came to love poetry and write verse, and acquired a feeling for the beauty of language. I roamed much in the woods, where I rounded up the cattle at night and knew all the wild-strawberry patches. I was given to day-dreaming about theological things, which occupied a large part in my education. This day-dreaming eventually became philosophy, which has sustained me in the vicissitudes of my career.

I graduated from the parish schools at the age of twelve. This might have been the end of my schooling, but a young curate, Pastor Bomgren, who conducted the examination, became very much interested in me and told my father that I had a better mind than he (the curate) and that it would be a pity to make a farmer out of me. He offered to take me into his family to tutor me for the gymnasium. He died before his plan could be put into effect. But he had changed my life. He seemed so grand to me that I could not believe what he said, but I knew that somehow I must have an education. His successor, Pastor Sjöfors, with his kind wife, carried out his intention, and after some tutoring I entered the second year of Fjellstedt gynmasium in Upsala, of which Kjerfstedt was the kind and masterful rector. I was the leader of my class, but the second year I fell ill and was sent home. Shortly afterwards my father died; and I decided to emigrate to America.

In the summer of 1887 I came over in the steerage and landed in a mining town in Illinois, where I worked in a blacksmith's shop for two years, getting what schooling I could on the side. The realism of wielding the sledge was added to the realism of the farm. I also learned a great deal about human nature in its rough, though honest and kindly, form. I graduated from a Normal school and taught for a year before I found my way back to college. I entered the University of Colorado as a sophomore in 1892. My most significant contact there was a course in Comparative Literature with Raymond Brackett, in which I was encouraged in interpretative writing and recommended to the editorship of the literary magazine as "the best writer of English in college." But I had spent my earnings. I was called to Minneapolis to help in the work of the Episcopal Church among the Swedish immigrants, and so found myself in the University of Minnesota in 1893–94. This was an important year because I was introduced to the social sciences by the beloved W. W. Folwell, to the psychology of William James by James Rowland Angell, and to Greek philosophy, both in survey and in the original. I wanted to go east, if possible to William James. An opportunity offered itself to go to Brown University in 1894. I became a student of James Seth for two years and discovered philosophy. I found that it was what I had always wanted. Really, it was my own philosophy of which I began to become conscious and which I tried to express in opposition to my beloved teacher and the great masters. It is characteristic of my mind that it has developed chiefly by opposition. The first masters with whom I wrestled were Kant and Hegel, whose works we took up for detailed study in seminars. I was fortunate

in receiving my early training under so fair-minded and objective a teacher as James Seth. Seth taught me the importance of sympathetic understanding of those with whom I disagreed, and later G. H. Palmer pointed out that every philosophy means a great deal to the man who creates it. My earliest meeting with William James, whom I had wanted to know for years, was on the occasion of my presenting a criticism of his essay "Is Life Worth Living?" at our Philosophical Society at Brown in 1896. I succeeded in rousing him to an animated reply. When he returned at the end of the school year to give the annual address before the Philosophical Society, he introduced his paper, "The Will to Believe," by saying that it was written to meet objections which had been raised on his previous visit. He was my friend for life.

In 1897 my dream to enter Harvard was fulfilled, in part through the interest of C. C. Everett, who secured me a Hopkins Scholarship and followed my course throughout with paternal solicitude. William James greeted me affectionately and was most sympathetic to my venture into philosophy. It was the heyday of philosophy at Harvard, the day of James, Royce, Everett, Palmer, Münsterberg, Santayana. Among graduate students I was contemporary with Bush, Lovejoy, Montague, Holt, Perry, Sheldon, Savery, Rieber, Horne. Strangely enough I lived mostly with my own thoughts and took little advantage of this brilliant array of philosophers. The only course I had with William James was a seminar in psychology. I attended seminars of the other men, except Santayana, whom I met only occasionally and with whom I had only one heart-to-heart talk on philosophy. William James kept in kindly touch with me, inviting me to his home to talk over my incipient ideas. But Josiah Royce was the master with whom I wrestled for the salvation of my soul from 1897 to 1900. It was in his seminar especially that I developed and expressed the beginnings of my metaphysics. It was in opposition to absolute idealism that I developed my theory of a real non-serial time which I first advanced in Royce's Hegel Seminar in the spring of 1898. Royce had invited James to be present on the occasion. James, of course, was warmly sympathetic. I had expected to be caught in the coils of Royce's dialectic. No man at Harvard could stand up against Royce in argument. Instead of attacking me, however, Royce devoted himself to a sympathetic exposition of my idea and paid me the high compliment that I had discovered a new concept. I worked on it the following year and presented part of my material as my doctor's thesis in 1899. Royce was good enough to say before the seminar that in his Gifford lectures he had modified his exposition of time to meet my criticisms. I was appointed Walker Fellow and Lecturer for the following year, being given the opportunity to present my material to Royce's seminar while he delivered the second series of his Gifford lectures in Scotland. In 1900 I was awarded the Austin Teaching Fellowship, but on the insistence of G. H. Palmer, who was chairman of the department, I gave that up and accepted a professorship at Grinnel College in Iowa.

It is impossible to measure the influences that act on our minds and determine our course. The greatest contribution that Harvard – James and Royce in particular – made to my development was the faith which they so generously manifested. On a visit to me in the West, some time after I had left Harvard, Royce, in the kindness of his heart and fearing, no doubt, that I might be discouraged in my isolation, said in an awkward, bashful way that he felt he owed it to me to let me know that at the time I took my degree it was the opinion of the department that I was the best metaphysical mind that had come to Harvard so far, and that he thought it still true, but that he could not vouch for the future. This to me was the verification of the prophecy of the young curate, and has been to me what the oracle of Delphi was to Socrates. Whether I have proved or disproved the oracle, it has given me courage to keep on with my search for truth through years of neglect. It may seem frank to say this, but I am trying to write as honest an autobiography as I am able.

My active teaching career has been spent in the West, with rare leaves of absence – four years at Grinnell College, nine years at the University of Kansas, fifteen years at Carleton College (including the year 1927–28 when I was visiting professor at the University of Southern California), and from 1928 at the University of California at Los Angeles. My philosophy has thus taken form on the prairies of the great Middle West – the heart of old America – with its strong common sense and conservative social philosophy. The expansiveness of nature, with its unimpeded vistas and yet its sense of homely friendliness, must, it would seem, in the course of years get into a man's spiritual outlook. So far as my social relations are concerned, they have been mostly with the Western students whose hearts and minds have been as expansive as the prairies. I have never felt consciously restricted in my thought. What the unconscious effect of the massive conservatism of the West has been, I cannot say. The fundamental postulates of my mind were probably formed unconsciously in the earlier period of my life, and the West has been a continuation of my early life. Individual genius follows its own course, and if the environment is not congenial to its fundamental traits it will express itself in violent antagonism rather than agreement. I have always tried to be honest with myself and others, and my students have responded with honesty and affection.

I ought, perhaps, to say something about my relation to pragmatism; but I own that I feel a strong repugnance to doing so. For I meant to do a generous thing and received only misunderstanding as my reward. The thing to have done would have been to attack pragmatism, and then I should have received some recognition. But pragmatism was attacked on all sides and the debate only led to more confusion, so I thought I would try the method of sympathetic interpretation. Pragmatism certainly claimed to be a rediscovery of everything that is sane, and I tried to view it in that light. The method of

C. S. Peirce aimed at clarification of meanings and might be used on pragmatism. I felt a deep friendship for William James. He was not well and was very much depressed at what seemed to him wilful misunderstanding of "us," meaning Schiller, Dewey, and himself, He wrote me rather pathetically that he wished I could see my "way clear to join the movement." I had a sporting interest in fair play, and felt that I ought to do what I could to help in clarifying the issue. So I wrote some papers in which I tried to interpret pragmatism in a realistic and objective manner. One of these papers: "What Pragmatism Is and Is Not," I submitted to William James. He replied enthusiastically, and said that I had "played all the variations and hit it right on every point," and that I was "one of the very few who have understood what we meant." I published the paper in the *Journal of Philosophy*, 1909. Schiller, though not enthusiastic, thought that I had defined pragmatism fairly, but that humanism means something more. Other pragmatists seemed to resent my interpretation. It appears that in attempting to clear pragmatism of misunderstandings I had "evaporated the richness of its meaning" for them. There was, I think, the further feeling that pragmatism – like the protective tariff – should be revised by its friends and not by an outsider. Many years later, in his *Reconstruction of Philosophy*, Dewey made many of the restrictions which I had made with an "of course," which was characteristic of pragmatism. I have at any rate the satisfaction that if I did not please the pragmatists I did not sacrifice truth as I saw it. Whether I had any influence in turning pragmatism into a more realistic direction, I do not know. The papers on pragmatism were included in *Truth and Reality*,1911. But my interest has always been metaphysical rather than epistemological, and I returned to my main purpose.

Pragmatism is now dead, and it is not seemly to speak ill of the dead. No one seems to want to own it now, except writers of French doctor's theses. Schiller is a "humanist" and Dewey a "naturalistic empiricist." William James exists in glory in spite of pragmatism. But pragmatism, though dead as a movement, has left us an adjective which is used a great deal by men of science – the adjective "pragmatic." Intellectualism has emphasized too exclusively the aesthetic aspect of truth as coherence and simplicity. "Pragmatic" emphasizes the other aspect, the convenience of an hypothesis in dealing with the emergencies of experience. Truth as we have it is never an exact picture of the nature of things, but it enables us to proceed in the direction of further acquaintance with reality. Pragmatism is America's most characteristic contribution to philosophy; and its effects have been felt, not only in philosophy, but still more in such practical fields as education, religion, and law. Long live pragmatism!

There has been, I believe, a continuous and consistent development in my philosophy during the last thirty years, though I have made no conscious effort toward consistency. My ideas have come to my mind as a result of an inner

and mostly unconscious dialectic. But sometimes some precipitating circumstance is evident. It was the reading in 1897 of Royce's *Conception of God*, especially the Supplementary Essay, which called forth my first paper on the reality of time as against absolutism – Hegel, T. H. Green, and Royce. My reading of Alexander's *Space, Time, and Deity*, in 1920, called forth my paper "Cosmic Evolution," upholding cosmic interaction as against mere emergence. My critical reaction to pragmatism made me conscious of the importance of recognizing the structure of truth as well as its function. Contemporary movements have been chiefly useful as irritants, when I have been conscious of them. If my development in retrospect seems consistent, the consciousness of this development has been decidedly discontinuous. The first idea comes as an overpowering intuition with great emotional vividness. I seize upon a piece of paper and write it down. Then through weeks, perhaps years, I build a scaffolding for it. And then perhaps the reader wonders why the idea should impress me so much when it has such a natural place in history. But the setting is all an after-thought.

The first expression of my philosophy took the form of temporal realism in my papers before Royce's Seminar and in my doctor's thesis on "The Concept of Time," 1899. These remain unpublished, but the fundamental idea was developed in the monograph, *Time and Reality*, published in 1904. (The idea was afterwards restated in Part IV of *A Realistic Universe*.) My first published paper, "The Reality of Religious Ideals" in the Grinnel *Unit*, 1900, indicates the main trend of my realism. The paper was afterwards enlarged and became the last chapter in *Truth and Reality*. My empirical realism and metaphysical energism, with the functional conception of qualities and values, found provisional expression in a series of papers in various journals. These papers were subsequently revised or rewritten and issued in *Truth and Reality*, 1911, and, more especially, *A Realistic Universe*, 1916. (The preface in each case indicates the previous publication.) My cosmic idealism found expression in *Cosmic Evolution*, 1925. The date of the books is no indication of the birth of the ideas or even their publication. Thus Chapters I, IV, and IX, which indicate the main trend of *Cosmic Evolution*, were published in 1921, while the manuscript of the book went to the publishers the latter part of 1924.

In the main, twentieth-century science has furnished the content of my philosophy, but this has been assimilated to the other types of human experience and to the historic structure of philosophy. Though thought is a living process and must be tested by its actual success in systematizing present evidence, it is a matter of surprise how much of what seems original is foreshadowed by the geniuses of the past. Philosophy is akin to poetry in its divination of the future.

NATURE AND REASON

John Elof Boodin. "Nature and Reason." *Contemporary American Philosophy: Personal Statements*, ed. George P. Adams and William P. Montague (New York: Macmillan, 1930), vol. 1, pp. 143–166.

Nature and Human Nature

It is because we live within the matrix of nature that we can hope to understand nature. We must take account of nature as it is from our frame of reference, including our human organization, biological and social. There has been a tendency of late to emphasize nature as it appears at the level of electrons. But nature is not any more real at the level of electrons than it is at the level of human personalities. In any case we know nature only functionally, i.e. through its reactions. If there is anything that science teaches clearly at present, it is that nature is energy. It is not some sort of stuff, and certainly not neutral stuff. Nature is what it does. To understand the activities in nature we must take account of the whole relevant situation in nature. Human organisms are structures in nature and of nature. They are reagents in the matrix of nature. The appearances of nature in relation to human nature are real appearances. But the appearances vary at different levels of nature owing to the character of the reagent. Nature appears with a variety, definiteness, and objectivity to an organism, with specialized sense organs and a highly developed nervous system that it cannot have to a jelly-fish. Pathological evidence shows that cerebral structure with its patterns makes possible an epicritic reaction to stimuli, i.e. a reaction to the location, intensity, and rhythm of stimuli, in contrast to the protopathic all-or-none reaction when the cerebrum fails to function. When we talk about nature, we generally mean nature as it appears to a normal, developed human individual. The baby does not react to nature as a mature individual does, partly because its brain is still undeveloped, partly because it lacks the social schema which the mature person brings to nature. The appearances of nature vary with the duration and structure of the reacting individual in the matrix of nature. At each level of nature the individual might say to nature: "that art thou."

As our attempt to know nature is primarily a relation of nature to a human organism with its physiological and mental patterns, the trail of human nature is, indeed, over all our knowledge. This is no reason for agnosticism in regard to our knowledge of nature, since human nature is part of nature, and the reactions to human nature are real relations within nature. Difficulties

arise only when we try to imagine what nature is to a reagent which is not human. Our categories and judgments, so far as they prove relevant to nature in its relations to us, are true of nature – in those relations. We try also to know nature in its relation to other reagents. But we must bear in mind that we are observing the appearance to a human agent of these reactions in other contexts. Our faith in knowledge implies that nature in its totality has a constitution akin to the human mind, and that our thinking of nature is relevant to nature in that sense. But there still remain the part-relations within nature on simpler levels of nature which we try to describe as best we can. At best our knowledge of nature on the lower levels is pragmatic, i.e. useful for prediction and perhaps control. We cannot have direct acquaintance with nature at these levels. In humanizing these levels, as we do in taking them into our schemes of knowledge, we are dealing with their character for us. What we must be careful to avoid is to discredit the relations of nature within the level in which we live and think in favor of the simpler relations. The epicritic reactions to nature are not less real than the protopathic. The former are the true appearances of nature at the level on which they appear, and they are the more adequate appearances.

The mechanical theory made it appear that the individual reactions in nature become more definite and predictable the lower down in the scale we go, but that was because mechanism is an intellectual transcript which we put into nature. The mechanistic interpretation of nature is as anthropomorphic as the romantic interpretation. Recent physics has shown that on the simplest level of nature the individual reactions are diffuse and uncertain, and that it is only because we deal with mass reactions in our treatment of matter that the reactions have for us the definiteness and predictability which they appear to have. The determinateness is statistical. It is, of course, absurd to speak of this indefiniteness of nature at the simplest level as freedom. Freedom can come only with organization, and choice based upon organization. But it is a gain to have destroyed the fetich of mechanism in nature.

We must bear in mind that we live on a macroscopic plane in nature, and our adjustments are to this plane. Electrons can be experimented with only in relatively abstract conditions in nature – a relative vacuum, shot through with enormous potentials of energy. At the temperature of the hot stars, structure and determinateness may be impossible. The physicist's findings seem at present contradictory and confused. Perhaps that is because the physicist has tried to interpret the lowest level in terms of categories borrowed from higher levels. Electrons figure in our living only in mass organizations with their unique properties. On this plane our convictions as regards temporal and spatial relations, of causal determinations, of the community of minds have relevance, whatever the results of physics may be within the elementary plane of nature. It is on the plane of human organization that we have science and philosophy. Electrons or jelly-fish, or even chimpanzees,

cannot make the reactions of science and philosophy. Science does not question the primary convictions which have been born out of our life in nature. It deals with specific problems. Philosophies must be criticized on the basis of their success in weaving into as simple, coherent, and adequate a scheme as possible our beliefs and judgments about the world in which we live. It is not the business of philosophy to make absurd the convictions by which we live on the level of human nature, but to make them explicit. Obviously it must do so from the point of view of our human intelligence since we have recourse to no other.

Philosophers' Rationalizations

In order that philosophy may clarify nature it must place itself in the midst of the living continuities of nature, and not separate itself from nature. It is the glory of ancient Greek thought that it never separated man from his environment, nor thought from nature. Its conviction, that reality must be taken in its integrity in order to be understood, is sound, however crude the results. Even Parmenides, in spite of his skepticism as regards the senses, is clear that thought must not be separated from the world it is to know. And Protagoras, in spite of his emphasis on human nature, is confident that nature is as it appears to human nature. The great rationalists, Socrates, Plato, and Aristotle, while they emphasized that knowledge means an insight into structure, and not a mere heaping up of perceptions, held to the conviction that it is the structure of reality which we strive to know, and not something inside our heads. But here the Golden Age of philosophy closes. Neoplatonism sought refuge from the problems of a complex and perplexing world in a mystical trance without distinctions. And scholastic philosophy was preoccupied with setting in order dogmatic theological beliefs. But neither of them separated intelligence from the world it strives to know.

Modern philosophy got on the wrong track at the outset on account of a false psychology. Descartes was a great physiologist, and discovered a great deal about the nervous system. He also had a good intention, viz. to place the soul in nature. But his conception of the soul as a point-entity situated in the centre of the brain made the relation absurd. That he made the mistake of making the pineal gland the centre of the brain is of little importance. Aristotle thought of the brain as a refrigerator for cooling off the blood, and supposed that the heart is the centre of the soul, but he had the right psychology, viz. that the soul is the dominance of a certain form or structure which makes the organism function at a new level. Plotinus was more nearly right than Descartes when he located the body within the soul, for mental activity includes the whole organism with a plus quality which distinguishes mental activity from merely automatic activity, which mental activity uses. Mind is a structure in nature involving, not merely the physiological mechanisms, but

the social environment and the cosmic environment. It is reality functioning in a unique way in a *milieu* of unique structure. Descartes' conception of the soul as an inextended thinking substance in an extended inert body made any commerce of the soul with its environment impossible, and therefore made knowledge impossible. And the absurdity was not lessened by the parallelism of Spinoza or the pre-established harmony of Leibniz. It is safe to say that the mechanistic physiology of Descartes has been and remains the greatest obstacle to a sound psychology and a sound philosophy. By isolating mind from its environment, it has been the source of the false subjectivism that has dominated modern philosophy. The remedy proposed by behaviorism, viz. to eliminate mind altogether, is not likely to lead to an intelligent appraisal of reality. The only hope is that physiology may in the course of time follow the lead of the new physics instead of the old, and discard mechanism as a scientific concept altogether.

Descartes' isolation of the soul from its *milieu* in nature led to Locke's spurious distinction of primary and secondary qualities. The former are supposed to be duplicated in external nature, and to be constant and invariable in things, independently of the organism; the latter are supposed to exist only in consciousness, and to be the result of the action of the qualities of nature upon the organism. Both primary and secondary qualities for Locke serve to characterize things, and are the only pragmatic basis of our consciousness of things. But both are events or "ideas" in consciousness. Locke's conception of knowledge as nothing but the agreement or repugnancy of our ideas insulates knowledge from the world which it is to know and makes it unreal. Experience becomes a container instead of a relation as it really is. While Locke still believes in the correspondence of the primary qualities and their arrangement with their archetypes in nature, it is obvious that this external world cannot enter the field of knowledge which is concerned only with "ideas." Berkeley draws the inevitable conclusion, and the external world becomes only a set of sense qualities. Since these are conceived as "ideas" or psychological events, Berkeley thinks they must exist in a mind and have a mind as a cause; and since this cause cannot be our private mind, it must be the divine mind which causes the "ideas" in us with the regularity and objectivity which we observe. Hume returns to the naturalism of Locke as regards sense qualities. But for Hume they are just "impressions," while mind resolves itself into a string of distinct psychological events, the only difference between psychological events and sensible events being a difference in vividness, i.e. a functional difference. Nature figures merely as assumptions of unknown powers. The order of nature is not in the events of experience, for these are distinct and separate. Our feeling of causality is due to "unknown qualities" or "a natural instinct" of human nature, and is added to the constant conjunction of events in experience. The conjunction of events is contingent and may surprise us at any time.

Psychology has usurped the place of metaphysics; and Hume's psychology does not rise beyond animal instinct, and the conditioning effect of habit. We cannot speak of structure, either in the human mind or in nature. The world is a meaningless show. It is true that we retain an animal faith in the show, but that is due to irrational instinct. Hume exposed the futility of the intellectualistic assumptions of his day and made philosophy a huge joke. We shall have to ask Hume to consign his own philosophy to the flames with other useless knowledge. What a pity that Hume could not have made his sound instinct for reality the starting-point of his philosophy instead of a refuge from it!

Kant added *Gestalt* psychology to Hume's psychology of habit. But unfortunately he accepts Hume's conception of experience as a succession of separate and distinct events, and the separation of these from reality. Hence the forms must be superimposed arbitrarily upon the events. Kant was right when he maintained that nature exists for us as determined by the structure of human nature. But Kant commits two errors in his account of the forms which human nature contributes to nature. One is a mistake in analysis. He confuses the contribution which is due to tradition – in his case the Newtonian tradition – with reflex action. The other mistake is in supposing that the structure of the human organism must be irrelevant to nature-as-it-really-is. This artificial separation of human nature from nature results in Kant's regarding the particular appearances of nature as "faked" by human nature in being "given" to human nature, and it results in his regarding the structure of human nature as arbitrarily imposed upon the data of nature. Hence the world as experienced, and as investigated by science, becomes a show world. The unity of apperception becomes a magic circle, separating the cognitive process from reality. But human nature is part of nature, and the appearances to human nature are true appearances. Nature is not "given" to human nature in the cognitive process; but the cognitive process is nature functioning at a certain level. Mind is the crest of the wave of nature, or rather the dominant chord in a matrix of waves having a unique organization and quality. It is the whole-situation in nature which has form, not something in our heads. Kant's spurious invention of an intelligence which should create its own data as well as its forms was intended to get rid of the artificial separation. But it was a purely gratuitous invention of which Kant himself made no further use. We can conceive of no such intelligence. But his suggestion led the romanticists, who felt no restraint of fact, to put themselves in the place of the Almighty and by the "omnipotence of thought" create their own world *a priori* with supreme contempt for experimental science.

Present philosophy is a whited sepulchre, calcimined with a coating of science and mathematics, but within are the dead bones of the past, and the ghosts walk abroad. The Cartesian dualism and the artificial empiricism which was based upon it form the background of "critical realism." There is

no agreement among "critical realists" as to what we know. Some seem to think that we know certain primary qualities, such as shape, size, and position. Some think that we do not know the properties of nature at all, but know their order. The percepts, the ultimate data of knowledge, are mere "patches in the brain," in the picturesque language of Bertrand Russell. How we get out of our heads to perceive the structure in nature is a mystery. Perhaps it is just certain philosophers who are out of their heads. Some think we know reality only under the guise of certain essences which, though they emerge somehow in the reaction of the organism to nature, do not exist in nature, but in some eternal realm of their own, wherever that may be (evidently in the head of some philosophers). The "direct" or "naive" or "new" realists, on the other hand, insist that they intuit the properties as they are in nature, independently of human nature. For them the percipient organism is a neutral medium. All relations are external relations, i.e. make no difference to the terms related. The Cartesian substances have become neutral stuff – mere transparent ghosts. But the ghosts remain. In the meantime romanticism, with a philosophy based upon wish-psychology, lingers on. But the almightiness of thought is not so impressive as it was in the nineteenth century. None of the current philosophies have really connected with the energetic theory of the science of to-day. Meanwhile, a crude behaviorist psychology is inoculating the popular mind with crass nineteenth-century materialism. It might be well for academic philosophers to take a holiday and go into retirement, until the dialectic of scientific and social advance shall produce an appropriate philosophy as in the days of ancient Greece. But as the chief end of academic philosophy is to furnish a living for professors of philosophy, such a renunciation is scarcely to be hoped for. In any case it would not avail unless we could muzzle certain popularizers of science who are corrupting their science with the old subjectivist traditions.

Prolegomena to Future Philosophy[1]

If we are to philosophize we must recover the sense of reality of the plain man and the unsophisticated scientist. We must place ourselves in our theory where we live in fact, viz. in the energy *millieux* of nature. Our psychological organism responds with its duration and organization within nature. It is not neutral. There is nothing neutral in nature. Everything is more or less determinate activity. Nature is what it appears to be in its various *milieux*, including those of which a percipient organism is an aspect. It does not hide behind its appearances. But the real appears. In this Hegel had the true

[1] For a fuller statement see *A Realistic Universe* (Macmillan), 1916, and *Cosmic Evolution* (Macmillan), 1925.

insight. The perceptual appearances of nature are not patches in a brain. They are characteristics of a total situation in nature in which we distinguish stimuli, sense organs, nerves, brain, and a mental structure with its tradition. But these are not separate entities. The psychological organism, with its individual duration, structure, and initiative, is for science a "bulge" in a cosmic field of energy. The soul expresses nature in a certain *milieu* of nature. It is not a rank outsider. It is not a string of psychological events in a brain, but a dynamic structure of an organic situation in nature. Even an imaginative event is not a patch in a brain, but an aspect of the activity of the entire organism, including the sense organs, as well as the nervous system and the brain.[2] Mental continuities in social communication exist in nature as truly as electromagnetic continuities. We have been misled by mechanical metaphors to discredit mental communication and to imagine minds as patches in brains, interrupted by the mechanical nexus in nature. But our recognition of the immediacy of mental continuities is as irresistible as that of sense continuities when they exist. Language is not the essence of mental continuities but the code, which must, of course, be built up by a conditioning process. But it is the quality of mental continuities which enables us to distinguish them from one another, and from mere wind for which we also have language. This does not mean ghost communication. It is the specific situation in nature which has a mental quality just as another situation has the quality of color. In either case we must interpolate a medium which will help us to explain the experience, not one which will make the experience impossible.

We must distinguish our primary convictions, which are born out of the matrices of nature (including society) in which we live and act, from our rationalization of these convictions. Folklore is encrusted with rationalizations which we assimilate so early in our experience that they seem primitive to us. Such encrusted rationalizations require criticism. The primitive convictions no one doubts in his heart nor ceases to act upon them. Among these convictions are the following: that we live in a world of interacting things, some of which are social, that we know these things through creative insight into their behavior, that these things are changing things, but with such constancy that we can in a measure learn to anticipate their behavior in specific situations, and that they are spread out with reference to one another and ourselves at various distances. The rationalizations of these convictions have been various. There have been different theories about the nature of things, about the agency of things, about their flux and constancy, about their temporal and spatial relations. Rationalizing philosophers have professed to doubt the reality of the physical world with its apparent properties and its temporal and spatial characters. But their conduct has corresponded to their primitive

[2] *Cosmic Evolution*, pp. 147–154.

convictions. I have found that my noble friends among the epistemological idealists live very much as I do, in spite of their theories that matter, space, and time are mere appearances. They require food and shelter like other men. They buy coal to keep warm, and they do not treat coal as spirit. They use various means of locomotion to get to places, in spite of their theoretical disbelief in the reality of space. They worry about the passing years and about getting old, in spite of the supposed ideality of time. Worst of all they die and deprive me of their companionship, at least in the familiar way. Their faith in an eternal order of meaning and value is sublime and inspiring. But their conception of it does not seem to explain the world in which we live. Their philosophy is more of compensation than an explanation. What men live by is their real metaphysics. Their rationalizations must be treated critically.

It is the province of science and philosophy to rationalize the matrix of nature in which we exist and act. But we must not forget that our rationalizations grow out of the tradition in which we live. We are prone to find that reasonable which is congenial to our prejudices. Throughout the process of rationalization, certain primitive convictions persist. They are the real *a priori* element in the cognitive process. But man cannot live by primitive convictions alone. He must attempt to understand his relation to the world. To this end he must try to re-create the structure of nature by imaginative hypotheses. These in turn must be criticized both from the point of view of their coherence and from the point of view of their suitableness to predict the behavior of nature. In the limited state of our knowledge, the latter criterion is more important. We may have to work with inconsistent hypotheses for the time being. This is illustrated in present physical theory. Both the electron, the unit of material energy, and the photon, which is the unit of radiant energy, may be regarded for some purposes as waves and for other purposes as corpuscles. It has been suggested that they travel as waves and react as corpuscles. We have at present no satisfactory theory of either material or radiant energy. To be satisfactory our hypotheses must be both coherent and serviceable. The more successful our rationalization is in these two respects, the more we feel that we have imitated, in our conceptual structure, the structure of nature.

The knowledge relation is a momentous and unique relation among the relations in nature. To say that the cognitive relation is neutral and makes no difference to nature is absurd. Nature as it manifests itself in the cognitive situation has a clearness, definiteness, organization, and value which it cannot have in other *milieux*. One cannot over-estimate the effect that conception and language have in articulating the distinctions in nature, though they have, in the sophisticated mind, given rise to false separations. What we must bear in mind is that nature is pluralistic, that it exists in an indefinite number of other *milieux* besides the cognitive, and that the other *milleux* have their own conditions and characteristics of which we must take account indirectly, i.e.

because of the differences they make to the cognitive *milieux*. The wood burns to ashes whether we watch the process or not; and we must try *a posteriori* to understand the conditions of the *milieu* in which wood burns. How difficult this is can be appreciated only by one who is familiar with the present problems of the physical sciences. So far as knowledge is true, in the sense of the above criteria, it deals with reality as it is. Since knowledge involves a creative element, an imaginative venture, it is liable to error, and must be corrected in terms of the primary experiences. In this sense it is instrumental. But the love of knowledge is an end in itself, and has its own value. The relation of philosophy to common sense and scientific knowledge should be to criticize the partial knowledge with a view to wholeness of knowledge. But in its effort to attain complete insight into reality, philosophy is concerned, not merely with science, but with art and mystical experience and their contribution to the meaning of life.

The fundamental conception of reality in the science of to-day is that of individual systems of activity in action, reaction, and interaction with one another. An activity system is the ultimate unit of existence, but activity systems are complex to thought, and can be analyzed into certain attributes. These are our conceptual abstractions for the purposes of description and cannot give us the uniqueness of the individual reality. This uniqueness can be grasped only in aesthetic and practical realization. It is an insight gained through appreciation, not mere analysis. But if conceptual thought is unable to reproduce the individual synthesis, it can describe and predict the behavior of things. In analyzing an activity system, we find we must take account of three types of variables – energy, time, and space. Henri Poincaré threw out the fruitful suggestion that energy means constancy. Einstein has shown that inertia or mass is energy of the opposite sign, thus getting rid of the dualism of matter and energy. In describing any activity, such as a falling body, a chemical composition, a type of radiant energy, we find that there is a variable or a set of variables (which are constant under determinate conditions), such as gravity, chemical elements, quanta of radiant energy. But these empirical constants by themselves do not constitute activity.

We must also take account of its spatial and temporal aspects. It is fashionable now to hyphenate the latter into space-time in describing translations in space. We have then four coordinates in terms of which we describe motion. Our mathematical picture is a purely descriptive device and, as Einstein says, has "no physical significance." Suffice it to say that in order to have description we must have certain identifiable constants which we can track through space and time. Such factors do not exist in isolation. They are aspects of activity systems, i.e. they always involve time and space. In material systems, electrons are the units for description. We must remember that constancy is here used in a relative sense. According to the theory of relativity there are no absolute constants. The units of mass, length, and duration

vary with the perspective in a world of relative motion. They also vary with the field. We cannot regard our variables in isolation from the structure of the field in which the activity takes place.

The analysis by science is pragmatic and does not pretend to give the full implications of the postulates involved. It is an edge, as William James would have said, by means of which we lay hold of reality, but it is a thin edge. The spatial and temporal aspects, as dealt with by the physical sciences, are especially thin and all but obscured in the artificial conventions which have been substituted for them in the interest of description. There is particularly a tendency to spatialize time, and thus lose sight of its metaphysical significance, as Bergson has so well pointed out. The merit of science is that it has recognized that, in some sense, space and time are essential aspects of activity systems. The relations in the real world are never a complete close-up as in the being of Parmenides. The action in activity systems is always over space, and always involves the passage of events. That is the intuitive basis of scientific description. The mathematical conventions which it uses are instrumental towards predicting occurrences whether within an individual system or between systems. I can now claim the support of Einstein in holding that in order to describe dynamic relations in nature, we must postulate a medium of space as well as matter. Without spatial distance, there could be no metric concepts. The nature of space must be ascertained empirically. What science requires is a metaphysical continuum in which (to use Einstein's language) there are "no parts that can be tracked through time." Space has "no mechanical or kinematical properties," no inertia. It has absolute conductivity. It lends itself to three dimensional locations. Einstein adds a peculiar property of his own, viz. that space or space-ether is capable of having its geometrical structure altered in the neighborhood of matter. But whether this is true of space or of a physical medium in space remains to be established. We must, I think, accept the physicist's and astronomer's finding as to the nature of space. The measurement of space in terms of conventional units is secondary, and presupposes the objective reality of space. The extensive units of measurement are derived from bodies in space and not from space, which has no units.

Time is the passage of energy whether quanta of material energy or quanta of radiant energy. If we view nature merely on the simplest level the passage has no direction. It is only when we view nature from the whole-point-of-view as entropy and history that the passage has measure and direction. The units of energy which the physicist postulates for descriptive purposes are not apparently affected (barring the relativity effect) by their passage. They may enter into compounds in which new characteristics emerge, but their own character is not affected permanently, at any rate, by the combinations into which they enter. Real duration, in the organic and psychological sense of cumulative growth of the past into the present, is unknown in the physicist's

world. Cumulative duration depends upon the peculiar structure of living things, especially the highly organized living things. It is here that we have the duration of habit and memory. Time, as the real passage of events, is bound up with change, whether it be the emergence of something new or the dissolution of the old. The quality of the passage of events depends, not merely upon time and space, but upon the energy structure of the system involved. It is clear that the passage of events is prior to the spatializing of this passage in terms of chronological systems. The confusion of the temporal attribute of passage with the quantitative measurements of this passage has been one of the outstanding errors of philosophy.

In analyzing an activity system we must take account, not merely of the variables, but of the structure of the activity. It is this structure which gives meaning to the activity and which we try to state in a formula. In a world without structure, there could be no thought, and therefore no science. Without cosmic control there would be no measure, no quanta, and no patterned activity. It is true, as Kant pointed out so impressively, that if the mind had no structure we could not have knowledge. But it is equally true that if nature had no structure we could have no knowledge. Mind is an individual activity system in nature, and therefore can express nature. From the point of view of evolution, mental structure is a creative adaptation of life to the cosmos.

In activity systems the parts are sensitive, in determinate ways, to one another's presence in temporal and spatial relations. Otherwise there could be no community, but only isolated monads. This sensitiveness of the parts to one another and their mutual determination does not constitute an organism. An organism is a characteristic type of organization and assimilates, grows, reproduces, and interacts with the environment as only an organic type can do. But every system of activity is sensitive to the presence of other systems in determinate ways. Sensitiveness or awareness is always an attribute of activity systems; and since activity is universal, awareness must be universal. There is nothing inert in nature. Sensitiveness characterizes nature at all the levels of organization of energy. This is not animism. We must distinguish between awareness and mind. Mind is one type of activity system, bound up in this existence with a highly complex organism through which it functions. Mental activity systems also possess awareness; but, as with other activity systems, the awareness varies with the situations in nature. Awareness plays about the zone of activity, to borrow a metaphor from Bergson, and gets its color and significance from the activity system. We have now defined the five attributes of activity systems, viz. energy, space, time, awareness, and structure.

Qualities are functions or aspects of activity systems in their various actions, reactions, and interactions. There is no sense in speaking of a thing by itself as having properties, for properties are functional adjustments. There is no

such entity as a thing in itself. Everything that exists is interrelated in activity systems, and every activity system is sensitive to changes in its field, and every field is interrelated in a determinate way with other fields. The universe is itself a system of interrelated activities controlled by a total cosmic field. Qualities are the ways of things or the appearances of things in various contexts and under varying conditions. By thing I mean an individual activity system. The only clue we have to the nature of things is their way of acting. It is clear that the properties or qualities must vary with the situations in nature, since they are aspects or functions of determinate situations. Sense qualities involve certain organic specializations as part of the situation. But the organic specializations of end-organs and nervous system are as much part of the situation in nature as the stimulus. Sense qualities are physical emergent. But the discrimination of qualities, their abstraction as aspects of things, their meaning in the order of nature is due to mind and the social tradition. Not all properties are sense-properties. There is the immense variety of properties in the various contexts of nature where organisms do not figure – chemical properties, magnetic properties, etc., which are conditioned by the simpler systems involved and their interaction. These various functional relations in nature make a difference indirectly to our sense perception, i.e. we can watch the changes taking place in nature, or they may be noticeable only in their duration over periods of time, but in any case they are inferred to account for nature as we sense it.

Similarity and difference are not properties of nature except as we include mental reactions as part of nature. They belong to the second order, not the first order, of reality. They are the result of our conscious operations on the appearances of nature. Identity can have precise meaning only in the operations of measurement. Grouping things into classes on the basis of similarity is due to our subjective interest, though the result must be relevant to nature. The relevance has reference to the particular level of perception. Compare, for example, the discrimination of the expert with that of the novice or the discrimination through the microscope with that of the unaided senses. We may group various hues of red into one class or series on the basis of the subjective affinity of our responses to these incommensurable qualities. We may further group into a class of classes all disparate hues of color to distinguish them from the various qualities of grey; and we may group all the hues and grays into a more complex scheme because they all refer to the causal relations of certain energies in nature to the organ of sight. Clearly such grouping is a subjective affair and secondary to the primary appearances in the causal nexus of nature. Philosophers may hypostasize the classifications into essences or eternal objects, and talk about the participation of the individual appearances in the essences or the ingression of eternal objects into the individual events. Surely this is a trick of language. So-called essences like color do, indeed, subsist as abstractions in the realm of spirit and enjoy a

dubious eternity there, for they are linguistic fictions, the artifacts of mind. They do not exist in nature in the sense that properties do. They are affective responses, while properties are qualifications of certain causal situations in nature (including, in sense appearances, our organism). It is indifferent to the appearances in nature that they strike us as identical, similar, or different, though this may help us to sort them in convenient ways and so improve our adjustment to nature. This function of essences was first made clear by Locke. There is, however, objective structure in nature which mind must recognize; else there could be no approximation in the process of discovery. Between the energy systems of nature there are determinate exchanges. In these exchanges we try to discover constants which we can track through the exchanges. But the recent history of physics shows too clearly that these constants are pragmatic constants. The real structure of nature is for us a limit which we can at best hope to approximate. Even functional recurrence in the infra-microscopic realm of physics is probably statistical. Our reaction to nature, not nature, is stereotyped.

According to my own empirical realism we take account of reality as it is in our primary relations within nature. In our secondary or cognitive relations, we often err in our interpretations of appearances, but the appearances of which we take account are real. All the appearances of nature in various contexts are on a par, so far as existence is concerned. Our emphasis on some appearances as more important than others is due to our interests. For practical purposes our selection is different from our emphasis for aesthetic purposes. The spatial and temporal appearances, i.e. the appearances of distribution at various distances from us and the appearance of motion with reference to us, are as real as the appearances which we call qualities. Values are real appearances. But they exist only in contexts where desires are involved, for values are satisfactions. We rank values according to importance or worth, but this does not affect their existence. Spiritual qualities are as real as material qualities, and in human life are more important. By spiritual qualities I mean those which we recognize in our social intercourse, including the intercourse with the divine, wherever it is an experience and not just words. We recognize human selves as having an intrinsic meaning and value which we must respect, and which we demand that others respect in us. In other words, we regard selves as ends, and not merely as means. We recognize the striving for truth, morality, and beauty as the unique activity of rational beings. In other words, it is their function to create in accordance with conscious ideals, and not merely to enter blindly into the creative situations of nature. Ideals are creative energies in nature. The distinction between material qualities and spiritual qualities is primary, and not dependent upon our rationalization. We may rationalize the human individual into an organization of electricity, or we may regard him, as Aristotle did, as having an influx of cosmic creative reason, but the properties which we must recognize

in social relations are in any case the same. The activities are real, and they are for us *the* reality. We must deal differently with selves from the way we deal with material things. This conviction cannot be set aside by rationalization. On the contrary, reason, if it is fair, must take account of this difference in trying to piece together its experiences into a consistent whole.

If we conceive reality as activity systems, the great problem is the problem of organization. The organizations of activity, as we observe them, exist in various kinds, degrees, and ranks. These types are not absolute in the local evolution of which we are a part. They emerge in the process. The problem is: Why do they emerge? My belief is that they do not emerge by accident, but by virtue of the relation of our local field to the structure of the larger cosmic field and the genius of the whole. Activity systems maintain themselves by exchange with the environment. Matter cannot give rise to radiations of a certain type unless it is first charged by the patterned activity which it gives out. Hence in a self-maintaining cosmos there must be a constant process of give and take. This means that the types of organization are eternally incarnate in the cosmos, though the bearers vary, and, "like runners, hand over the torch of life."

In any local history, whether individual, social, or cosmic, the cycle runs its course because it is charged by patterned energy from the larger whole. But the response is not a mere repetition of the pattern communicated. The particular history responds to the stimulus in terms of its own structure and duration. The individual emerges as an act of cosmic genius in the appropriate conditions in nature. In the inorganic world there seems to be exact reproduction of patterns. Witness the similarity of the spectra of matter everywhere. But where there is cumulative duration, i.e. where the past is taken up into the history of the individual, the variation of response increases. The living organism becomes less and less dependent upon the immediate stimulus, and lives more and more with reference to the past and the future. This is evident wherever there is learning from experience, but especially so where there is imaginative memory and anticipation on the basis of memory. The unit of reality at any level is not the instant, but the dynamic whole-pattern of the individual with its duration. It is this whole-pattern which determines selection, assimilation, and response, whether on the chemical plane or the psychological plane.

If evolution is statable in terms of the organization of energy into greater complexity, there will always be a certain amount of relativity about what we call levels or critical steps in local evolution. The origin of living compounds marks for us a critical step of fundamental importance, though if we could have followed the stages in the evolution of nature we should probably have found it difficult to fix upon the critical moment. In some respects the evolution of the multicellular organism with its co-operative parts and forward-looking pattern is a more significant crisis than the simplest begin-

nings of life. What strikes me as the most momentous crisis is the appearance of creative reason, with its reflective analysis and synthesis. For this cannot be accounted for in terms of mere duration, however complicated. Creative reason cuts across the past and the present alike. It substitutes ideals or limits for custom. It marks the beginning of true freedom. Sensation, habit, memory, even the response to similar and kinds, may be routine. Creative thought marks a radical change in our response to nature and to man. It reconstructs experience in accordance with its own demands. Aristotle is right that here we connect with another order of reality, a spiritual order, the creative reason in the cosmos.

When we take the emergent point of view and follow the successive organizations of matter, through ever more beautiful complexities, it seems as though each later step in the series followed naturally from the preceding. We are especially inclined to invest matter, the lowliest emergent organization of energy, with greater and greater potencies. Mind itself becomes a function of matter, or at most a speculative hypothetical limit. Everything seems part of nature's routine. How different when we view the process from the point of view of creative spirit! In the communion of mind with mind, in language, art, and institutions, matter has merely instrumental significance. The supreme reality is the meeting of spirit with spirit in a unique synthesis with its emergent properties and values. As we view nature from the point of view of spirit, the process of evolution, i.e. the process of organization is seen as a process of spiritualization. As we follow the beauty of each stage of organization down to the atom and electron, the problem becomes to find matter. It is now matter which becomes a limit, the only significance of which is that it is the potential stuff for organization or spiritualization. The realm of matter and the realm of spirit are the two great realms, and it is the realm of spirit which overlaps. Here we have the great contrast. Matter spends its energy in radiation, spirit grows rich by expression. The more it spends the more it has. If it spends nothing, it dies. Therefore, it is more blessed to give than to receive. Matter is the realm of routine as contrasted with the free creativeness of spirit.

Matter is essentially a medium of exchange. It must become charged with patterned energy to give out patterned energy. Eventually, when the local expenditure exceeds the supply, the local matter goes the downward course. This does not mean absolute loss of energy. The energy which is expended here finds elsewhere a centre of reaction where the process of integration may start anew. This is implied in the conception of the cosmos as a going concern. The material energy is constant, but its distribution varies. In this redistribution, energy is communicated as patterns or whole forms; and these, in the adventures in space-time, give rise, in accordance with the local conditions, to a new cycle – as the communication of patterned energy in biological conception gives rise to a new generation of the type of the preceding or nearly

so, and as the patterned energy of society produces, in successive generations, greater or less conformity to the established type.

The cosmos, viewed as a whole, does not come into being or pass away. It is self-sustaining. It has a constant structure. Not only is its energy, viewed in the abstract, constant, but its levels or types of organization are constant, since energy is communicated as patterned energy. Evolution is a local process in which the material cycle runs its course, in unique response to the patterned energies communicated from part to part within the whole, under the guidance of the spirit of the whole. The patterned energies, which are communicated from more advanced systems, furnish the impetus to advance. The individual response, however, is due to the character of the individual system, and not merely to the impetus from outside. Hence there need not be individual repetition. This becomes increasingly true with the emergence of life and its unique duration. Over and above the routine of nature there is creative spirit, ever present in its own right and in its own kind – a unique realm of energy which exists, not by division but by unity, not by dissipation but by expression. This creative spirit gives meaning and order to nature's routine, and in the fullness of time incarnates itself into the flesh of mother earth to produce a new kingdom of order and value. Matter and spirit remain the two fundamentals. Of these, spirit gives organization, life, purpose, meaning, worth to the process. Matter furnishes the raw material and inertia. Transformed by spirit its random motion is standardized into patterns, and becomes meaningful and beautiful so far as its inertia permits. Without spirit, it is mere weather.

It is the tendency in present thought to emphasize science as the exclusive method of apprehending reality. Far be it from me to minimize science. It has vastly enlarged our conception of reality. But we have seen that at best science leaves us with abstract systems. It cannot, as science, give us back the unique reality of individual activity. Science must be rooted in the primitive convictions which furnish the background of thought and be supplemented by, and integrated into, the intuitions of concrete reason in moral, aesthetic, and religious activity. These intuitions must furnish the goal of scientific activity itself. It is in our moral, aesthetic, and religious experience that we grasp the individual significance of things and selves and the spirit of the whole. The world of values has its place in the scheme of the whole as well as the world of existence, and in the final analysis the two are inseparable. This must be true if we accept a spiritual control as the guiding field of activity. The world of values has its structure as well as the world of facts; and in our view of evolution the structure of value is the structure of fact. The structure of beauty is the structure of the cosmos, and science is really a pursuit of beauty, if the cosmos is dominated by spirit. In a broad sense the cosmic process is an aesthetic process, for the realization of pattern is aesthetic realization. Spirit increasingly dominates matter and gives soul to matter, until

emergent spirit wins its freedom and uses matter as its instrument in its expression of the ideal – the ultimate cosmic pattern, which in the imperfect process figures as a limit. There is, however, always the inertia of any level to the charge of a higher dominant pattern, and so we have the problem of maladjustment and evil.

The love of form, which is the individual inspiration of the scientist, the moralist, and the artist, points to the same objective order which in religion reveals itself as the great companion and enters into vital communion with those who are devoutly disposed. The genius of the cosmos creates in love and inspires the reciprocity of creative love. Being a free creator it seeks to bring to birth free creators. Its service is perfect freedom. It does not despise matter, but uses matter affectionately as the instrument of creativeness. But matter at best is a transient and imperfect embodiment of spirit. The creative genius who spiritualizes nature does not emerge in nature's cycles. It has its own individual life of infinite richness and value. It has its eternity in the life of spirit – in the ever-present cosmic spirit, which incarnates itself afresh, as the individual permits, in the cycles of matter, and in the continuity of emergent spirit within the economy of cosmic spirit. Here worth is the test of survival, and that survives which has sufficient prospective realization, in other words, which can enter into the freedom of creative spirit.

In a world in which spirit lives and works, the free realization of the category of worth, as set by the spirit of the whole, is immortality. But in a pluralistic world of interaction and freedom there may be damnation as well as salvation. We determine what the world shall be for us in the world of values. Whether our individual life is worth living or not, whether the pessimistic or optimistic outlook is justified, whether we are free creators, or creatures of circumstance, whether damnation or salvation shall be a fact, as far as we individually are concerned, is a venture of faith. The structure of value is eternal, but our participation in it lies in our own control. To choose freely to realize, in our individual lives, the beauty of spirit is the great affirmation; to refuse to do so is the great negation.

Principle Publications

Time and Reality, Psychological Review Monograph Series, 1904.
Truth and Reality (Macmillan). 1911.
A Realistic Universe (Macmillan). 1916.
Cosmic Evolution (Macmillan). 1925.
Studies in Social Theory in the *American Journal of Sociology*, 1913, 1914, 1915, 1917, 1921, and in the *International Journal of Ethics*, 1914, 1919, besides articles in various journals, which have been incorporated in part or in a revised form in the above books. These have been indicated in the prefaces.

FUNCTIONAL REALISM

John Elof Boodin. "Functional Realism." *Philosophical Review* 43.2 (March 1934): 147–178.

The presidential address to the Pacific Division of the American Philosophical Association at the University of California at Los Angeles, December 29, 1933.

The American realists[1] have grouped all types of realism into two classes: "naïve" and "critical." Both titles are misnomers, since the "naive realism" of philosophers is sophisticated and "critical realism" is based on dogmatic assumptions. But they serve to indicate two different attitudes to our knowledge of nature. Because of the wide publicity which these two attitudes have had in America, a third fundamental type which I shall call "functional realism"[2] has been neglected though its lineage goes back to Protagoras. It is this type which I shall try to explain and defend in this paper.

It is not my purpose in this paper to exhibit the variety of realisms, which are only limited by ingenuity in coining phrases for various permutations. I am concerned with the underlying principles. From this point of view there seem to be three fundamental types and the remainder can be considered as hybrids or variations. (1) The type which holds that the qualities and the relations which we sense exist in objective nature independently of the percipient organism, just as we perceive them. This is naïve or direct realism in the strict sense. (2) The type which holds that the qualities and relations which we sense are mostly due to the percipient organism and do not exist in objective nature as we perceive them. This would be critical realism in the strict sense. (3) The type which holds that the qualities and relations which we perceive are functions of objective nature and the percipient organism in perspective relation to one another. This type I call functional realism.

[1] British realists, such as G. E. Moore, C. D. Broad, H. H. Price and others, have made a more extensive analysis of types. But I am concerned with underlying principles rather than with variety of types.

[2] For the author's previous statements see *Truth and Reality* (1911) Chs. xiv and xv; an article "Knowing Things" in *The Philosophical Review*, 1912; expanded in Chapters 5 and 6 in *A Realistic Universe*, 1916 (revised 1931); and Chapter 7 ("Space-Time Perspectives") of *Cosmic Evolution*, 1925.

Naïve and critical realism have one fundamental assumption in common. They both assume that to say that substances and qualities exist independently of the environment has a meaning. They make, at the outset, a bifurcation of thing and environment as though they were only externally related. They postulate things in themselves with properties in themselves. This postulate rests on an antiquated science. According to the old scientific conception – which goes back to Leucippus and Democritus – an atom would remain the same though everything else were destroyed. Its character is intrinsic to itself. This postulate leads to opposite results in naïve and in critical realism. The naïve realist implies that the percipient is neutral in his awareness of the external world and therefore he perceives the qualities and relations in external nature as they are in themselves. He fancies himself to be an angel. The critical realist is aware of being in the flesh and believes that the percipient organism, by a characteristic action of its own, fakes the properties of the external environment and therefore he cannot get to the properties of the external substance as they are in themselves. But both the naïve and the critical realist assume that there are things in themselves with properties in themselves. About the relation of these properties to the thing in itself neither troubles himself. And the reason for this is that both of them are part of the Aristotelian tradition, *viz.*, that properties inhere in substances. Aristotle supposed that it is possible analytically to abstract these properties from the substance until you get to the underlying indeterminate substrate – like peeling off the layers of an onion, and, as in the latter case, nothing remains.

As opposed to the assumption of things in themselves with properties in themselves, functional realism holds in common with present science that the bifurcation of thing and environment is vicious, that things exist only in fields, in mutuality with other things, and that they have properties only in their dynamic interrelations. We may illustrate this conception with the property of weight, one of the most fundamental properties of the physical world. Democritus and Plato thought that weight is due to the amount of matter. Since the atom is supposed to be a plenum, *i.e.*, absolutely full of matter, the difference in the weight of atoms must be due to difference in size. Weight was supposed to be an absolute property and in no way affected by the environment of the atom. Newton discovered that it is functional, that it depends upon the relation of matter to its environment. Without an environment of matter there would be no meaning to saying that an atom has weight. Unfortunately, Newton did not see the bearing of this discovery upon substance and property generally. If he had, the course of modern science and of modern philosophy would have been different. Philosophy would not have been haunted by the ghost of things in themselves and modern naïve realism and critical realism would have died unborn.

Since properties are dynamic relations of energies involving time and space and are therefore directional (or, as mathematicians would say, have the

vector-character) within the dynamic network of nature, we may speak of them as perspective relations. A configuration of energy, which we select as a frame of reference, exists as such a configuration and has the character it has by virtue of taking account, in its own way (because of its history and organization), of the environmental configurations of energy in specific space and time relations within the cosmic situation. This does not mean that the individual configuration does not count. The relation of mutualness of parts would have no significance unless the parts contributed to the relation. Nature consists of a great variety of individual systems of energy with their individual history, organization, inertia and "aptness" (as Locke would say) to participate in the cosmic matrix. Science indicates that there is an element of indeterminacy in the behavior of nature, and therefore an element of uncertainty in the prediction of individual reactions, though if we take individuals in the mass we may have statistical prediction. But what I wish to emphasize is that no individual organization, be it an atom or a human personality, lives to itself or dies to itself, but all are members, one of another, and of the whole cosmic community, with its super-individual control.

If we speak of the dynamic relations in nature as perspectives, we must understand that the perspectives are integral to reality and not merely incidental, as those who cling to substances in themselves with properties in themselves are apt to suppose. "In the perspectives of experience," says Santayana, "I cannot, except in these very perspectives, reach the terms which they posit as self-existent in order to see whether my perspectives were rightly drawn. I am in the region of belief mediated by symbols, in the region of animal faith."[3] If one held, as Santayana does, to "self-existent terms," one certainly would be in a dilemma and it is doubtful whether even "animal faith" would help. But self-existent terms are a fiction of an antiquated science. "A thing is what it does," as St. Thomas Aquinas and Lotze truly affirmed. And a thing does not do anything by itself. It exists and has properties only when it reacts with something. It is itself only as it is mutual, as Hegel might say. Its properties are due to what it acts on as well as to itself. The physicist has learned that he cannot say what an electron is when it does not act. Its character of individual particle is very likely due to the encounter with radiation or another electron. All we know about it is what it is when it acts. Anything else is a *post facto* projection. And that is true of everything else. To act implies space and time. It implies direction of action from a certain place and time to a certain place and time. We cannot say *a priori* that the direction must be straight. That depends upon the field in which the action takes place. The direction may be curved. But we can say that all action is perspective from some configuration to some configuration of energy in time and space. What we consider as the terminus of the action is

[3] *Scepticism and Animal Faith*, p. 115.

as much a part of it as what we call the initiation, and the two are reciprocal. There is not in nature the relation of active and passive. Everything in nature is active. What we consider as agent or as re-agent depends upon our interest. Nature knows no such distinction. Perspectives in nature are nature in action and nature exists only in action. But one perspective cannot give the whole of reality. Nature exists in an indefinite number of perspectives in the plurality of interacting systems of energy in nature. There is also an indefinite number of possible perspectives. Possible perspectives of action are perspectives which may occur when certain conditions shall be present which are not now present. I see the salt granules. That is an actual perspective. But I can also put salt on the tongue and get its saline taste. That is a possible perspective relation. Since I have experienced this saline reaction at various times, I consider it as one of the possible properties of salt.

We may call the reactions of nature, of which we must take account as immediate data, *primary perspectives* as contrasted with our judgments of nature which we may call *secondary perspectives*. These two types of perspectives vary independently of one another, the former with the conditions in nature and independently of my interest, the latter with my psychological history. We do not create the primary perspectives by taking account of them. The salt produces a saline reaction on my tongue, whether I want salt or not. I may mistake it for sugar, but it still tastes saline. Whether I want it or what my judgments are about it depends upon the psychological situation which in turn is bound up with my past experience. The primary perspectives are objective to my secondary perspectives. The secondary perspectives are subjective, but that does not mean that they are unreal. They are part of nature as truly as the primary perspectives. They may be more important to my conduct than the primary perspectives. It may be vastly more important to me what a person's subjective point of view is than what he perceives as objective in nature. And it may be more difficult to change it than to change the configuration of the landscape. Subjective points of view are energy-perspectives of which we must take account.

While we may distinguish for purposes of analysis between primary and secondary perspectives, they are not separated in our life in nature. In the adult perception of philosophers, conceptual elements, including language, enter into their perceptions of nature. The conceptual elements permeate the perspectives of immediate experiencing, and become identified with the situation as sensed. This accounts for our perception of definite things. We do not sense *things*, though from philosophers' talk about pens and tables one would suppose that we do. Things are the result of interest and conceptual interpretation. A pen or a table is a group of perspectives in nature that fulfils a definite purpose. A table is not "given," liberal though philosophers are with the "given." If "given" has any legitimate meaning, it is that we can abstract an aspect of nature and use it as a datum or problem for investigation.

Material things are not given any more than spiritual things. Both are interpretations of the aspects of nature. Both involve a high grade of social consciousness with the fixations of meanings in language. History shows that we are only too apt to introduce our evaluations into the primary perspectives of nature. Such an evaluation is that of primary and secondary qualities. This distinction is irrelevant to nature as sensed. It is the result of an evaluation of nature for our purposes – descriptive, practical, esthetic. So is the distinction of appearance and reality. The experience of nature on the level of philosophers is shot through with judgments and evaluations which philosophers too often confound with the "given." On the reflective level there can be no "raw experience." To have such experience of nature we should have to return to early infancy. For reflective human nature perceiving is conceiving. But we must see to it that the conceptual interpretation is relevant and adequate to nature as experienced. The conceptualizing of our immediate experience, no doubt, enriches our understanding and enjoyment; and it makes possible the control of nature. But we should not confuse the conceptual elements with our immediate perception.

We must distinguish between the qualitative perspectives of nature and the spatial and temporal perspectives in the causal matrix of nature. The failure to make such a distinction has resulted in much confusion in our epistemological theories. Qualitative perspectives are nature actualized in the specific situations in which we sense and feel nature. They are nature as immediately lived. They include the causal conditions of nature. For purposes of prediction and control we analyze the causal situation into factors and conceive our qualitative world as emerging from these. But the causal factors must not be taken in the abstract. They are projections by the mind to account for the qualitative world and must be relevant thereto. They are real only as actualized in that world. Nature is what it reveals itself as being in our qualitative experience, though it is not exhausted therein. In nature are an indefinite variety of qualitative occasions of which human nature is not a part.

Our qualitative experience carries its own credentials. Primitive man lived this qualitative world as truly as we, though he was ignorant of the causal conditions, and we know but little of them. Like primitive man we eat what agrees with us and depend upon nature to do the digesting. The world of qualitative experience is rich. It includes not only the sense-aspects which we refer to external things, but also our feelings, our values, which reveal nature under certain conditions as truly as do the sense-qualities which we use as descriptive of nature. For the organism, with its interactions, is part of nature as much as the external world. Nature is pleasant or unpleasant as truly as it is extended and colored.

The qualitative experience of nature has its own completeness. Its qualitative aspects cannot be eked out by reference to the causal conditions of nature, but only by reference to one another. The qualitative acquaintance

with nature through one sense is eked out by qualitative experiences through other senses, and external sense-experience is eked out with affective and motor experience. Man could not have lived if a causal knowledge of the world had been a requisite for his qualitative experience. He has adjusted himself to his world, first of all, on the basis of his qualitative experience of his reactions to nature. He has been guided in his use of the environment by the qualities of things as he has sensed them and the felt satisfactions and dissatisfactions which things have produced in his experience of them. The values of things have been of no less importance than the descriptive qualities. In fact, the former have been practically of prior importance, though not more real than the latter. In this qualitative world the organism has oriented itself to things spatially and temporally, as the magnet orients itself to the lodestone and as the plant orients itself to light. Like the magnet and the plant, the human organism exists in the spatial and temporal field of nature. It does not, any more than the magnet or the plant, require "animal faith," as Santayana supposes. Nature is activity and activity is spatial and temporal. There is no mysticism in this except in a false philosophy. Because different observers can have the same organic perspectives in nature, the qualitative aspects which they investigate become integrable and, therefore, communicable as between different observers. Different organic perspectives, whether for one observer or as between observers, are not integrable if the qualitative difference can be distinguished, though they may practically be integrable, *i.e.*., the difference may not matter for the purpose.

Qualitative experience has its own temporal and spatial perspectives. Man's kinesthetic sensations have enabled him to adjust himself by organic habits to the distances of things and the motions of things, even before he learned to reduce his qualitative world to quantitative measures, though these have added greatly to his effectiveness. The quantitative measures are themselves part of the qualitative world. We measure sensible magnitudes by other sensible magnitudes which we select as our units. We do not measure magnitudes in our brain, however abstract we may become in our calculation and however convenient it may be to substitute numbers for the sensible magnitudes. The scientist may fool himself into thinking that he is just dealing with abstract counters or "pointer readings," but these would have no meaning except for the concrete world from which they are derived. Even the magnitudes which are far below our sense-perception must be measured indirectly in some way with reference to scales which we can perceive, or we should have no evidence.

Through its kinesthetic sensations from joints, muscles and tendons the organism has the qualitative experiences of motion, resistance and strain in its life in nature. It is from these humble organic sensations (together with the diffuse sensations from our autonomous system) that we get our first-hand realization of the "go" of nature. And however abstract our mathematical and

physical description of the "go" of nature may become, it has its starting point in these specific organic sensations, without which, as Poincaré truly saw, we should have no mathematics or physics. Without the sensations of movement we should have no geometry and without these and the sensations of strain and resistance we should have no physics, though it does not follow that we can transfer our macroscopic experience of pushing and pulling to the minute conditions of nature, whether within or outside the organism, as the old physics did. Even our most ideal activity, with its consciousness of intention or direction, is dependent upon these humble organic sensations for its consciousness of realization. For man is an organism and not a ghost; and his activity, whether of the primary or secondary level, is the activity of an organism.

It is evident that the human organism requires a variety of experiences – visual, auditory, kinesthetic, affective, etc., for its acquaintance with nature, but these are integrated into the life of the organism, as a whole, to further its will to live. It is a vicious abstraction to conceive of man as just a sensory being in his life in nature. The externally referent sensory life of man is bound up with his affective and his motor life. If his sensory life determines his affective and his motor life, these no less determine the effectiveness of his sensory life. There can be no impression without expression. What we perceive is conditioned not only by what we sense, but by what we feel and by the motor adjustment of the organism, as Brown[4] has so well shown. We cannot understand the life of the organism in nature unless we view it as an integral whole – sensory, affective and motor – in the hierarchy of organization which is involved. Of this hierarchy we are not immediately aware. It belongs to the causal conditions of nature which we postulate in order to understand the life of nature. But this organization figures none the less in the actuality of man's life in nature.

The confusion of the immediately experienced qualitative perspectives of .nature with its inferred, problematic, causal factors has dogged both the direct and the critical realists. When the direct realist says that the light-rays are colored independently of our organic reaction, he has attributed to one part of the causal nexus what is the function of the whole, including the organism. It is as though he should say that because H_2O is wet hydrogen must be wet. Sir James Jeans has shown that when we look at the blue sky or the sunset through a long narrow tube, we perceive no color but only splotches of grey. The environing parts of the retina must be stimulated to get the color effect. But further than that, the sensory surface itself would not exist except for the sensing. We could not by getting nearer the perceived object get the object

[4] See Harold Chapman Brown's presidential address for 1932, "Mind: An Event in Physical Nature," *The Philosophical Review*, XLII, pp. 130–155. The phrase, "physical nature," shows the author's prejudice.

which the physicist infers from his more refined instruments, physical and conceptual. It is of no interest to us that the direct realists have sometimes lost their nerve and have attributed some of the sense-qualities, such as those of taste and smell, to the action of the organism, since we hold that all the sense-qualities are compound functions, involving stimulus and organic conditions. Olfactory qualities are no more or less organic than color qualities. Nor is it of any interest to us that some realists, like Thomas Reid and S. Alexander, have postulated a special faculty of intuition for the so-called primary qualities. All perceived qualities are alike sensory experiences of nature.

The critical realists have been no less confused as regards the qualitative field of perception and the causal conditions. They too have held that we must get to the physical agitations at the source or in the immediate vicinity of the stimulating energies in nature in order to get the real character of the sensed object. But they have been troubled by the fact that their organisms are not neutral but react in characteristic ways. If naïve realists imagine that they are angels, the critical realists try to imagine what the world would be if they were angels. We cannot examine the variety of ways in which the critical realists have conceived the relation of the percipient organism to external nature. Some, following Locke, have thought that the primary qualities get through somehow and that we perceive them as they really are in nature or at any rate very like what they are. But how can we know? If we compare the macroscopic world of our perception with the postulated microscopic world of the mathematical physicist, it is difficult to see what the resemblance can mean. Other critical realists have maintained that we perceive no qualities as they are in nature, but only the mathematical relations, forgetting that mathematical activity is certainly as characteristic of the percipient organism as the sensory activity. If they mean that we perceive geometrical configurations in the field of immediate qualitative experience that is true. But these are certainly as organically conditioned as the qualitative aspects of the field. Moreover, psychology has shown that the geometrical configurations are marked off by the qualitative aspects. Light and grey shades are particularly effective in marking off contours. The color aspects are not so effective, as they tend to blend. But what these critical realists mean is presumably that the geometrical contours to which they give a peculiarly objective status are identical with or at least resemble the contours of the external physical field in the absence of the percipient organism – if he only could get to them. Alas! If only the critical realist had no eyes he might see. As it is, the contours he perceives are certainly due to the selective reaction of the organism. Without the organic reaction there would be no continuous surfaces in nature. In short, the critical realist has made the same mistake as the direct realist in attributing to one set of causal conditions in nature, *viz.* the physical, what is a compound function or emergent of the physical and the organic conditions in conjunction.

Other critical realists go the whole length and maintain that both the qualitative characters and the mathematical relations are contributed by the percipient organism. This was the position of Kant and seems to be the position of Whitehead. This means universal agnosticism as regards the knowledge of nature and is the logical result of critical realism. This Kant clearly saw and was properly puzzled over the fact that science discovers empirical laws in nature. As I understand Whitehead, the organism first projects a geometrical schema and then invests it with the sensory qualities which it fabricates. He admits external stimulus but regards this as "irrelevant." But if the rhythm and intensity of the external stimulus show a correlation with the sensed quality it is difficult to see how they can be irrelevant. It is true that the organic condition is also a factor, and this may produce variation in quality independently of the external stimulus. For example, towards twilight, when the intensity of light is weak, the organism does not respond to wave-length with characteristic color discrimination and the environment is murked in grey. But with dual conditions we should expect variation in quality with the variation of either condition. Presumably what Whitehead has in mind is that when an external energy, such as light, acts upon another kind of instrument, such as an interferometer, it reveals itself as frequencies and not as color. But we should expect light to reveal different characters in acting upon different instruments. When light acts upon a normal retina under normal daylight conditions, it is colored. Color is light when actualized in the retina. As Aristotle put it, when light does not act upon the eye it is only potentially color but when it is actualized in the eye it is color and then the world is colored. Of course this is only one way in which light may be actualized. It may also be actualized in the interferometer and then it is frequencies. Is not frequency an emergent property as much as color? What can frequency mean apart from proper instruments of reaction?

Whitehead, however, attributes little importance to sense-quality. Instead, he stresses feeling. His language of feeling is as fluctuating as the feelings. He sometimes uses feeling in the psychological sense of feeling tone. In this sense, it is a fusion of a large mass of organic sensations, especially from the autonomous system. This is an emergent fact as much as the sense-qualities which we use to characterize external things. While feelings are an important revelation of our life in nature, they are certainly not less organic than the more specific sense-qualities. Together with the specific sense-qualities, the feelings constitute the immediate awareness of our life in nature. They are more massive and in that sense richer than the specific sense-qualities. But that is no reason for putting them on a different metaphysical basis. Sometimes Whitehead uses feeling for our whole immediate awareness of nature. This immediate awareness he calls prehension, as contrasted with apprehension. Prehension suggests active seizure; and feeling, instead of being an emergent, becomes an efficient cause in nature. As all nature is organic for Whitehead,

feeling becomes *the* efficient causation in nature. And since reality is conceived as dynamic, feeling becomes reality, and Whitehead is brought by his own route to the mysticism of Bradley. Feeling, as one type of the emergent actualization of nature – the florescence of life's activity – becomes the whole of reality. Such ambiguity will give the philosophers much material out of which they can make a living and will no doubt be perpetuated.

Presumably the critical realists consider themselves critical because they base their arguments upon physiology. They demonstrate, if nothing else, Pope's aphorism, "A little learning is a dangerous thing." We know little of the physiological conditions of sense-experience. We do not know what are the respective contributions of sense-organs, intermediate neural centers, and the cerebrum. They all have a share, no doubt, in the conditioning of our qualitative experience. The past emphasis has been upon the sense-organs. But the stimulation of separate nerve-fibers could not furnish the condition of the variation in intensity, since separate fibers act by the all-or-none method. The variation must be due, somehow, to the stimulation of a number of fibers and must be a resultant in the neural centers. The cortex, it seems, may become charged with vibrations which originated through connection with the environment. Not only can a blow on the head make us see light (though confusedly) but visual and other experience can be initiated from within, as shown by memory-images, not to speak of hallucinations. Direct stimulation of the upper temporal convolution can produce the consciousness of sound and even different pitches of sound (though there may be a reflex effect to the ear and back by way of the centrifugal sensory arc[5]). What seems clear is that the sense-organs and the nervous system under normal conditions act as a unit, and that the sensory quality as perceived is an emergent from the total action of external energy, sense-organ and neural hierarchy. The percipient organism does not sense a stone as a grey patch on its own retina (as Whitehead supposes), though it may sense a patch on somebody else's retina. Seeing is first of all a photochemical process and it involves the hierarchy of neural centers as well as the retina. For spatial localization in two or three dimensions there must be a schema of the cortex, as Head has shown. When the cortex is badly disintegrated, whether from disease or accident, the patient loses his epicritic sensibility, *i.e.* he can no longer distinguish locality, intensity and rhythm. But neither can we regard a percept as a patch in the cortex, as Bertrand Russell seems to think. It could not be revealed by microscopes. Russell appears to have confused the causal conditions of sensing with the emergent fact of sensing. We may have external perceptions of the brain, even of the living brain through an operation of trepanning. We might even see our own brain in such an operation with properly placed mirrors and we might

[5] See the author's *Cosmic Evolution* (1925), p. 151.

conceivably touch it with our fingers, but that is a very different sort of functioning from the brain *perceiving* its own sense aspects.

All primary perspectives in nature are real. There can be no question of their existence, whether it is the perspectives in the physical and chemical transactions outside of the organism or the sensory perspectives in the interaction of the organism with its physical environment. There are no illusions in the primary perspectives of nature. All illusions are due to judgments, whether it be the implied judgments on the level of "conditioned responses" with which the behaviorist deals, or the articulate judgments in which the philosopher is interested, or the gradations between these levels. The challenge of the reality of our immediate sense-perspectives on the ground of illusions is based upon a confusion of secondary factors in experience with primary factors. That a stick appears bent when seen in the water is not an illusion on the primary level. The appearance of bentness is a true perspective, physically and organically, in that situation in nature. It becomes an illusion only when we judge that because a stick appears straight in the air, it should have the characteristic of straightness when seen in the medium of water, or when we demand that because the visual appearance of straightness in the air correlates with the tactual appearance of straightness, therefore the tactual and visual appearances should be correlated when the stick is seen in the medium of water. But there is no *a priori* reason why appearances in different sense-perspectives should have a constant correlation. Things with a pleasant taste are generally correlated with pleasant organic effects in the alimentary system, but when they give us a stomach-ache we do not call that an illusion. Images in mirrors have been called illusions. But there is no illusion in the primary perspective. The reflection of light in a mirror is a true physical perspective and the sensing of the physical transaction is a true organic perspective. It is only when some one judges that the image in the mirror is the thing itself, as perhaps a young dog or a young child or a critical realist might do on the basis of resemblance, that there is an illusion. But there is no illusion either in the physical perspective of refraction and reflection or in the organic sensing of the physical situation. It is only because we are prone to identify the secondary perspectives, which are the result of the psychological set and history of the observer, with the primary perspectives of sense, that we attribute such illusions to the latter. I do not experience the image in a mirror as an illusion. Functional realism accepts the veridicalness of direct experience. Of the causal conditions of direct experience our knowledge is fragmentary indeed. But our ignorance of the conditions does not invalidate our direct experience.

Since Berkeley's brilliant analysis it should not be necessary to refute the mistaken notion that some sense-qualities have a privileged character, *viz.* that some appearances of shapes or sizes or motions are true while others are false. As he pointed out, we can have no standard for sense-qualities except other sense-qualities. Some philosophers are still simple enough to imagine that

some sense-appearances are true to the physical character of the world, independently of our organic reaction, but microphysics would not give them any aid. It is convenient for certain purposes to select a certain perspective as our standard, but that has nothing to do with the question of reality. Few, I imagine, even among philosophers, would be naïve enough to say that the color seen in daylight is true and that seen in electric light an illusion. It is plain enough that we must select the conditions in nature for which we want a certain color, as any woman would do.

It has been charged against our immediate qualitative experience that it is fleeting – that it is always becoming and never really is and therefore cannot be the basis of truth. This prejudice is as old as Plato. When Hume introspected he could find nothing but feelings and ideas succeeding one another with incredible rapidity, and modern philosophy has generally been introspective. William James adopted from some obscure writer the fiction of "the specious present." The moment of conscious experience was supposed to be a sort of saddleback, including a top or zone of clearness (as Titchener called it) and descending to the vanishing point at either end, one end being the vanishing into the immediate past and the other the emerging of the immediate future. The whole moment was supposed to occupy only a fraction of a second, though it might possibly be stretched to two or three seconds. This fiction has found great favor with philosophers. With psychologists the method of introspection has become suspect or is used cautiously. Behavioristic psychology deals with responses and Gestalt psychology with direct experience. In neither case does "the specious present" have any relevance. The specious present was based presumably upon attention. Attending introspectively is a difficult and notoriously uncertain undertaking. We must have objective tests. Now it is found when we try to attend to a black dot on a white background, or when we attend to minimal stimuli – a very faint light, sound, pressure – that attention acts in a rhythmic way. The object goes out and reappears again. The reason for this is obscure. We know that single nerve-fibers quickly become fatigued and as quickly recover again. The rhythm may be due to the narrow physiological base of the sense-perception. At any rate when the field of direct experience has complexity we can attend to an object for a considerable time. It does not seem to go out. And normally we do not glare at a dot but at a field. We may test the limits of attention temporally by the number of successive sounds of which we can take account without using recall by memory. The number varies with groupings; we can take account of as many limited groups as individual sounds. But attention shows the same limitation in simultaneous exposures. We only perceive, in the sense of being able to recall, a small number of events – dots or numbers or words in an exposed field – but we can recall about an equal number of groups within a limited space. There is no reason to suppose that the limit or the rhythm of attention is the same as the limits or rhythms

of sensory experience. We are vaguely conscious of a field of varying complexity and varying relations though we are attending to only a small part, and the gestalt psychologists have shown that the total field is effective in determining the character of that part to which we are attending. The fiction of the specious present seems to serve no useful purpose in psychology and I do not see why it should be kept alive in metaphysics. Attention is the spearhead of action and has great executive importance, but no great metaphysical significance.

Our experience of nature is not a single-file succession of events, but a field with its own extensity and duration, within which we can distinguish parts with varying extensity and duration. The temporal, spatial and causal relations of this enjoyed qualitative field are not added to the qualitative aspects of the field by the mind. They are intrinsic to the field; the qualitative experience is spatial, temporal, causal. The chimpanzee which bit angrily at the branch on the stick, with which it was trying to reach the bananas on the other side of the bars, had the immediate experience of spatial, temporal and causal relations in its qualitative reactions in nature, though it also had the insight to attend to those relations and not merely fumble by mechanical trial and error. It had the consciousness, in its discriminative responsiveness, of its organism as an active factor in nature. If the relations were linguistic abstractions, such as Bradley postulates, we should indeed be unable to bring the *disjecta membra* of our experience together and should in despair have to fall back on mysticism. But relations are intrinsic to our perspective qualitative experience of nature. This experience is temporal, spatial, causal, with its cumulative organic significance. As a secondary operation upon this matrix of immediate experience, the organism can distinguish similarities and differences in the qualitative field and establish new groupings of sorts or kinds. In recognizing sameness in its reaction it can create "essences" or universals which are derivative from qualitative experience and do not hover in a world of their own.

I see no reason, moreover, to suppose that we perceive past, present and future moments of time.[6] Our direct experience, no doubt, has duration, extensity, groupings, both simultaneous and successive, and relations of nearer and farther, spatially and temporally. But such characters are aspects of direct experience. We may, as a result of our practical interests, have the feeling of goneness of that which has disappeared and of expectancy, which may be merely organic alertness. But the schema of past, present, and future is an ideal construction on the part of high-grade minds. And the quantifying of the direct experience of duration into moments – seconds, minutes, hours,

[6] For the discussion of past, present and future see the author's *Time and Reality* (1904) Ch. v and *A Realistic Universe* (1916, 1931) Chs. xiv and xv. *Cp*. A. N. Whitehead's *Adventures of Ideas* (1933) Ch. xii.

days, years – is certainly as artificial as the quantifying of the direct experience of extensity into units – feet, yards, miles or whatever may be the nomenclature. The schema of past, present, and future and the schema of moments are the results of operations upon our direct experience in the service of conceptual interests. To speak of the handing over of the past or the thrust into the future is plainly an inversion. Our memory makes the consciousness of the past and our expectancy makes the consciousness of the future. These are dimensions which the mind creates, they are not forms which are given to it. More fundamental than our ideal constructions of past- ness and futurity are the transformations in nature which, on the one hand, condense into the cumulative organic structures which enable us to re-live in a new situation occasions which we are conscious of having previously experienced, and, on the other hand, emerge as novelty on the background of the present field of experience.

What I wish to emphasize is that we derive our conception of constancy as well as our conception of change from our direct qualitative experience. Within the field of experience there is varying change and varying constancy. Various parts of the experienced field, whether we view it objectively or subjectively, have different durations. Some are fleeting, others endure indefinitely. Sense-qualities in the objective field have a high degree of constancy. Our feelings are supposed to be particularly fleeting, but some endure and become likes and dislikes. Our emotions, while not a matter of a fraction of a second, cannot stay at high pitch indefinitely, but as moods they may have a long duration, as sentiments they may continue indefinitely. It is the constancy of our qualitative experience of nature which leads us to seek for constancy of conditions to explain it. We invent "eternal objects" of matter because of the constancy of the qualitative sense-aspects which we group as material. The qualitative experience is constant within our epoch of nature, but the "eternal objects" have proved very mortal the last few years. Let us give direct experience its due. It is from direct experience that we must derive our concepts, and our concepts are valid only so far as they are relevant to our direct experience. If our qualitative experience which we call water were always perishing and never the same, we should not think of discovering constant elements to explain it. As a matter of history the early conceptions of elements were those of qualities – the wet and the dry, the hot and the cold, and the light and the heavy.

The veridicalness of our sensory information of nature has been challenged on the score that the sensed quality or group of qualities is in a different time and place from the thing perceived. It has been pointed out that if the thing is away from the organism it takes time for the excitement in the things to travel in order to reach the percipient. We cannot say, therefore, that we perceive Sirius, for light is supposed to require eight years to reach our earth from Sirius, and Sirius may have exploded in the meantime. Even when we

sense parts of our own organism, it takes time for the neural excitement to reach the cerebrum; and it even takes time for excitement in one part of the cerebrum to reach another part. According to Whitehead the organism is in the past in perception – past to the soul, which he does not define. The conception of transmission seems to make impossible the consciousness of direct acquaintance with nature which we all feel that we have. We are here face to face with one of the fundamental dilemmas in our conception of nature. Our immediate experience is convincing. We feel in immediate community with nature, including the distant nebulae revealed by means of the telescope and spectroscope. But how can this be, if the excitement, which is part of the causal condition of our experience, takes time to travel? Instead of living in the expansiveness of nature, as we normally feel and believe that we do, we seem on the basis of current philosophy to live only in the cortex and even a patch of the cortex. Must we abandon the evidence of direct experience and instinctive belief? This is doubtless the greatest wave of objection that we are obliged to breast. What Hercules can we summon to get us out of this predicament?

There is another principle which has been overlooked by philosophers, namely, the principle of cosmic immanence. This principle first struck the scientist's attention in his investigation of the minute structure of nature. The Rutherford model of the atom conceived an atom as a planetary system with a central nucleus and with electrons moving around it in various orbits. Bohr found that when there is radiation from an atom, an electron must shift from one spatial orbit to another – from an inner to an outer orbit. The scandal was that this shift is instantaneous. But if electrons are particles of electricity, the shift must take time. Science was confronted with a critical instance of absolute simultaneity in nature, and if such simultaneity can exist on a small scale, it can exist on a large scale. A new conception of the electron was called for and this resulted in the wave-mechanics of Schrödinger. As a wave an electron may be immanent in various orbits, and two or more electrons may be immanent in the same orbit, though not functioning in the same way. It would be too long and too difficult a task to unravel the new quantum physics. But we are here concerned only with the principle of cosmic immanence. Schrödinger's electron pervades all space in its three dimensions, though with decreasing intensity. The universe is an interlacing of waves. Everything is immanent in everything else. But energy becomes kinetic only when there are "beats" and a new harmonic must be established. It cannot be said that the wave-conception has crowded out the particle-conception. In direct action electrons seem to bombard as though they were particles. Many physicists regard the wave-conception as the more fundamental, but the evidence seems to require both. The same duality of wave and particle reveals itself in electronic matter as had previously been shown to exist in radiant energy, and the conviction is growing that electronic matter is

ultimately a condensation of radiation. It has been held for some time that matter spends itself in the stars as radiation, and there seems to be recent evidence from the physical laboratories that radiation may become condensed into electronic matter.

I believe that the principle of cosmic immanence is the Hercules which can rescue direct experience from the onslaughts of epistemologists. Let us transfer the scene to physiology. Increasing evidence shows that the brain does not act merely as a collection of neurons but also as a field, *i.e.*, as a unit. The structure of the whole brain is involved (as shown in experiments in re-education and elsewhere) in perception, in the learning process, in remembering and thinking. That means that in some respects the parts of the brain are immanent in the whole and the whole brain is immanent in the parts. Biochemists, led by Claude Bernard, have come to the conclusion that in some respects the organism acts as a whole. This has been brought out strikingly in the researches of J. S. Haldane on breathing, and L. J. Henderson on the circulation of the blood. That the cerebrum is immanent in the lower neural centers and in the sense-organs is shown by the epicritic control and dominance which it exercises upon the processes of sensing and reaction. Without this control the human organism, at any rate, reverts to sensing and action of the all-or-none type. We may of course turn the situation round and say that the sense-organs, lower neural centers, glands, are immanent in the cerebrum.

Let us now extend the conception of immanence to cosmic proportions, and we may say that in some real respects the human organism is immanent in the cosmos and the whole cosmos is immanent in the human organism. We shall later touch upon the conception of cosmic adjustment. We may say that there is a real sense in which Sirius is in "virtual contact" with the eye and the brain of the spectator, as G. N. Lewis maintains. In Schrödinger's language, the waves which constitute Sirius are immanent in the wave-configuration which constitutes my organism. If the wave-action of Sirius is sensed as light, the energy- configuration of Sirius is immanent in my eye and brain, though its intensity decreases with the square of the distance. Hence the destruction of Sirius would make an immediate difference to my experience of it. If you reply that it has been proved that light moves 186,000 miles a second, I can retort that it has also been proved by the Michelson experiment that light does not move in the ordinary macroscopic sense, for the motion of the earth makes no difference to the motion of light. In the case of light, the moving body is always at the center of the sphere of vibration, while in the case of any other vibrations, such as those of water or sound, the moving body, from which a disturbance is started in the medium, would intersect the sphere of vibrations and produce interference. Light, in other words, behaves, with reference to a body moving in its direction or away from it, as though the body were stationary. The duality of causal communication and cosmic

immanence is only another phase of the duality of particle and wave – a duality which seems to be pervasive in nature. The upshot of this discussion is that science furnishes a justification in terms of cosmic structure for our direct consciousness of reality.

It is plain that the position, suggested in this paper, is one of universal relativity. But relativity needs to be defined. Some have maintained that it always means subjectivity, *i.e.*, relation to an observer. Others have maintained that it must always be conceived as objective, *i.e.*, independent of the observer. Obviously relativity requires analysis. We must distinguish between objective relativity, which is due to the conditions of nature independently of the attention and interest of the observer; and subjective relativity, *i.e.,* relativity of judgment where the history and interest of the observer are involved. As regards objective relativity we must distinguish physical relativity, due to conditions in nature which are independent of the percipient organism, and organic relativity, in which the organism is part of the matrix which must be postulated in nature in order that we may understand the causal conditions of the qualitied situation which we are immediately experiencing. Both physical and organic relativity are objective in nature, *i.e.*, they do not depend upon the percipient's attention and interest.

We have defined objective relativity as relativity in nature which is independent of mind, *i.e.*, of attention and interest; and we have distinguished two types of it, *viz.* physical and organic relativity. We must now illustrate these. Physical relativity has become part of our physical outlook on the world because of the epoch-making work of Einstein. Einstein has advanced two theories of relativity, the special or restricted theory, and the general theory, which is a theory of gravitation. The special theory is a highly artificial conception and has little metaphysical significance. Its contribution, so far as it concerns us, is that all observations of nature are made from a frame of reference which has perspective relations in space and time to other frames of reference in relative motion to our chosen frame. So long as we make our observations and measurements on our own frame of reference, no problem arises. Everything happens as though our own frame were stationary. The problem arises when we attempt to make observations and measurements having regard to a frame of reference in motion relative to ours. It then appears that the lengths are shortened and the durations (the clock-intervals) are correspondingly lengthened. This effect is supposed to be reversible. The reason for this is that, in our present ignorance, we do not know the absolute motion of anything, but by Einstein's (or rather, Lorentz's) formula of transformation, we can translate the appearances in the perspectives of relative motion into terms of one another. The special theory is obviously a pragmatic dodge to cover our ignorance. But its importance for us is that it deals with physical effects, which, though they must be observed in order to constitute data for science, are independent of the percipient organism.

Einstein's general theory is a theory of gravitation, but it has been universalized by Weyl into a general theory of cosmic adjustment. Both Newton's and Einstein's formulae of gravitation exemplify cosmic adjustment, though in Newton's theory the gravitational adjustment is a direct adjustment of masses to one another in space while in Einstein's theory it is indirect. Instead of bodies directly influencing one another's course in space-time, the bodies change the curvature of space and this determines the course of bodies. But for Weyl the conception of cosmic adjustment has wider implications. Lengths and durations are ultimately conceived as determined by cosmic "curvature," and that explains how measuring rods and clocks which are once congruent when together in space-time may become congruent when again brought together in space-time, irrespective of their adventures in the meantime. Weyl's conception of cosmic adjustment explains the constancy of the electric charge everywhere and the constancy of atomic clocks. Still more broadly stated, it explains the uniformity of nature in its physical and chemical transformations. It involves the principle of immanent cosmic control as well as multiple transformations in space-time, and it is the former which accounts for the regularity of nature. What concerns us here is that such cosmic adjustment is independent of the percipient organism. It is of course true that it is through changes in the percipient organism that we must get our information. But the movements of the planets and the stars and the physical and chemical transformations of nature (including many physical and chemical changes in our own organism) take place whether we are sensibly aware of them or not. The physical conditions of nature vary independently of the organic conditions, and *vice versa*.

In what I have called organic relativity, the organism is part of the situation in nature. The sensible aspects of nature, which furnish our data of knowledge, would not exist unless the organism were part of the matrix of nature. This does not mean that the sensible aspects of nature are relative to mind. Mind in its relation to nature functions as attention and interest. The ambiguous phrases, "in the mind" and "contents of the mind," have played havoc with our modern theories of the knowledge of nature. They are responsible for the solipsism which is implicit in our theories of knowledge since Hume. Philosophers have felt obliged first to throw the percipient into solipsism and then to try to get him out. They remind me of the country doctor who first must throw his patient into fits – because he was "death on fits." Whatever may have been the success of the country doctor, the epistemologists have never succeeded in getting the percipient out of solipsism, once they got him in – not even when they have inflated his ego to the dimensions of the absolute. For functional realism, the sense-aspects are "in the mind" or are "contents in the mind" in no other sense than that they are attended to. Attending to the size, shape or color of a thing does not constitute these sense-aspects. If attention created the sense-aspects we could make them

anything that we might wish. While Berkeley thought that the sense-aspects are created in the perceptual situation, he recognized that they are objective to our interest. They are involuntary and are constituted in relation to objective reality, though for him this objective reality is God and not "inert matter." Since science in his day conceived matter to be inert, he took the logical alternative, that of mind, which he conceived to be active. Now that we conceive matter as energy, his disjunction is no longer coercive. We hold that the sense-aspects of nature are independent of the mind's operations of attending, judging, etc. That mind as an organization of energy can also produce changes in the organism – its motor adjustments, its distribution of energy – is another story, but it holds even so that the immediate sense-aspects of nature are objective to attention.

According to the conception of organic relativity, the organism with its structures of sense-organs and nervous system enters as a causal factor into the conditions of nature of which the sense-aspects are conceived as emergent characters. To say that sense-aspects are emergent characters does not mean that they are a mere accretion to nature and that we must divest nature of them to get to what it really is. Since our only first-hand acquaintance with nature is through our sense-aspects, this view would land us in hopeless agnosticism. But this is a false bifurcation of nature and human nature. Nature is what it does, and action implies reaction. There is no substance which has a character by itself. All properties are emergent. Nature reveals itself as sense-aspects in its action upon human nature. It is colored, it is sweet, it is solid, it is extended, it is rhythmic, if it reveals itself as such in the reciprocal action of nature and human nature. It has been said that our sense-perception has to do with the macroscopic world as contrasted with the world of microphysics. It is assumed that there pre-exists a macroscopic world upon which our senses are molded. On the contrary, our macroscopic world emerges in our sense-perception. Locke pointed out that if our senses were microscopic (using the word in its present sense*), i.e.*, if they could sense the minute constituents and motions of things, we should have a very different sort of world and our senses would be useless for practical purposes. It has been said that we sense only surfaces. Such a view substitutes a consequent function for a preexistent reality, to use Dewey's language. The surfaces are the result of the sensing. The world of microphysics does not present us with continuous surfaces. It is mostly empty space with scattered dots of electrons. It has been said that we must postulate the sensing of material things. This statement exemplifies the same fallacy. Things are called material, not for what they are in themselves, which is meaningless, but because of the group of sense-qualities. To postulate sensa or sensibles is only another instance of the same fallacy. Sensa or sensibles are abstractions in discourse of sensory perspectives.

In saying that nature is its sense-qualities I do not mean to imply that it is only sense-qualities. The energies of nature interact with one another in

other contexts beside those of which the organism is part. Perspectives in nature mean not merely the sensible perspectives which emerge from the organism taking account of changes in the environment, or of the changes produced in the organism of part upon part, but also changes in the environment from part taking account of part in space-time relations. Parts of nature reveal to us "aptness" or "powers" to act upon one another and produce characteristic changes of which we must take account. No doubt, we must discover these changes in nature through "their effect upon our sensible simple ideas" as Locke puts it, but the changes take place independently of such effects. We infer these physical and chemical changes and the properties involved in nature to account for the variation in our sense-qualities. The kettle of water on the fire starts boiling, the wood in the grate turns to ashes, the moon changes its relative position, whether we are sensibly aware of these transactions or not. There are other properties in nature besides sense-properties. These are implied in the changes of our sense-aspects, but they are not dependent upon our sense-aspects. They constitute part of the story of nature. They are not more real than the sense-aspects; and, cognitively, we depend upon the latter for our inferences in regard to the former. In short, organic relativity is part of objective nature as much as physical relativity and is independent of mind, *i.e.*, of our attention and interest.

We must now say a word about subjective relativity. Some philosophers regard it a scandal to admit that there is subjective relativity. But surely it plays a very large role in human experience. If objective relativity is independent of the attention and interest of the observer, subjective relativity varies with the history and interest of the observer, and these in turn vary with the history and interest of the society of which he is a part. It is notorious that our judgments and evaluations of nature, including human nature, vary from time to time in the history of the individual and in the history of the race. The physical course of nature has been apparently constant during the comparatively brief epoch of human history. But what a marvelous series of transformations have taken place on our earth as a result of human interpretation and experimentation. In a fundamental sense, we must regard the transformations of mind and in turn its transformations of the environment as part of the cosmic process. By mind I do not mean a substance in itself with properties in itself. Mind is a name for functions, as matter is a name for functions. Locke had at any rate the right intuition. With the limitation of his analysis we are not here concerned. He understood that by matter we mean certain sensible qualities such as "bulk, figure, number, situation, and motion of parts," together with "powers" in the parts to produce changes in other parts (implied properties). If we mean by material substance certain properties, we have equal right to mean by spiritual substance that which has certain properties. "By putting together," says Locke, "the ideas of thinking, perceiving, liberty, and power of moving themselves and other things, we have

as clear a perception and notion of immaterial substances, as we have of material." This only means that when nature functions in ways which we recognize as mental it is mental, as much as when it functions in ways we recognize as material it is material. There is no sense in saying that nature functions as mental by virtue of its material aspects any more than in saying that it functions as material by virtue of its mental aspects. One might as well say that it functions as colored by virtue of its olfactory aspects. Since substances are postulated to account for functions they cannot be independent of them. In fact, substances are indices of functions and possible functions. The point I wish to stress is that mental functioning is a genuine and vastly important aspect of nature and that the realm of mental functioning has its own history and establishes its own relativity, *i.e.*, the relativity of our conceptions of nature to our further judgments and evaluations and the relativity of these to history. This is the realm of subjective relativity. It must be understood, however, that subjective relativity does not need to mean private or solipsistic relativity. It may be social relativity – relativity to the group – though it would be dangerous to assert that the whole of any individual's inner life is public or can be made public.

The recognition of relativity does not mean the denial of structure. Heraclitus has been very much misunderstood. He meant to emphasize order (*Logos*, *Hodos*), rather than change, though he recognized change as a universal fact. In this he does not differ essentially from other Ionian philosophers. It is by his insistence upon order, rhythm and measure in change that he has a unique place. It is because there is order and equivalence in transformation that we can have predictability and science. The qualitied world of our experience is a world of structure. But structure is not revealed to immediate experience. We do not sense structure. For the revealing of structure another organ is required than the senses. In this insight Democritus and Plato agree. Nor do we get structure by immediate intuition. By intuition we can discriminate white from black, but we cannot in that way arrive at the structure of an atom or of a work of art. I have heard that there are philosophers who believe that they have a direct intuition of all "essences." They must have a wonderful faculty of clairvoyance. They should be able to give us the structure of atoms, molecules, organisms, yea, of the universe, and we could dispense with the plodding, tentative methods of science. Of course, if they only mean that white is white, and black is black, and that you can identify the same black or white, that is no great discovery. A child or even an educated chimpanzee, if it can acquire the linguistic labels, could know as much as that. But there must be an esoteric wisdom, known only to the initiated. For the rest of us the grasping of the structure of things requires both creative thought and experimental testing. This is true equally of the subjective and the objective realm. Most of us do not know the structure of our own mind any more than that of matter by immediate inspection. Whitehead tells

us that feeling is a subjective form. But this is a misunderstanding of Plato's *eros*. Love is not form, but spiritual love is a striving for form. It is true that it is the feeling for form which is the drive in both science and art. We must have a feeling for consistency, unity, harmony and simplicity to be moved to seek to produce form, whether it be to create a scientific theory or a work of art. But immediate feeling itself is as amorphous as is sense-perception. Both indeed imply form in the world of which they are aspects – but only to a creative mind.

While the recognition of form must come through the creative insight of the minded organism, that does not mean that the form is only in the mind. Kant was right that unless the mind possesses structure we cannot discover structure. But ordinarily it is not with the structure of mind that we are concerned. We seek the form in the objective situations in nature. The mind does not dictate the form to nature. It does project form into nature and in this sense we may speak of "the ingression of eternal objects," but this "ingression" is tentative and subject to observation and experiment. Scientific "ingression" is a trial-and-error process – unlike Whitehead's "ingression" from a scholastic God. We seek the structure of things which will account for their responsiveness and we check our conception of it by their responses. It is so that we must discover the structure of mind as well as that of matter. We have an *a priori* faith that there is structure in our qualitied world, but what kind it is can be found out only by trial-and-error experimentation, intellectual and physical. If we came to know the structure of physical things by their responses, so we must ascertain the structure of organisms through their functions. The structure which we conceive to account for reflexes and their conditioning cannot account for the survey, analysis and construction which are characteristic of responses of thinking. No blocking of habits will give rise to thought unless we have an organism with the requisite structure.

The cognitive perspective relation is a real and momentous relation in nature. It has transformed the significance and control of nature in the history of humanity. It is not true, however, as epistemological idealism has maintained, that the cognitive relation is the *ratio essendi*, the ground of existence, of everything. There is an indefinite number of perspectives in nature beside the cognitive perspective. To say that reality cannot be known unless it exists for knowledge is of course mere tautology. The fact that other perspectives of nature may at times enter into the perspective relation of judgment and discourse is possible only because they have existence in their own milieu in nature. Physical and organic perspectives exist whether they are known or not. We must discover them and as yet our knowledge is very limited. But we must not, because cognitive perspectives are not constitutive of other perspectives of nature, ignore the fact that they exist as aspects of nature and involve their own conditions of organization and their own history. Cognitive perspectives or points of view, moreover, are not just

abstractions in discourse. They are energy-perspectives and powerful to transform nature. They involve the whole organism at a certain level of organization and functioning. And they do not exist *in vacuo* but function in the milieu of nature, of which the social milieu is an essential part. The cognitive relation has its own characteristic duality[7] of subject and object or referent and relatum. It is in the cognitive relation that our qualitative perspectives become data. They are not data in themselves, but only for cognitive experimentation. It should be pointed out that cognitive duality of subject and object does not coincide with the distinction of subjective and objective perspectives, previously made. Object in the cognitive relation may be physical, organic or mental. It means any aspect selected as a datum by the cognitive interest. It may be gravitation or a toothache or $\sqrt{-2}$. Cognitive perspectives, therefore, may cut across any other perspectives, or rather, any perspective may become a datum for the cognitive interest, including the cognitive interest itself. But this has nothing to do with the existence of other perspectives in their own milieu of nature. Since all perspectives are selective relations in nature, the cognitive perspective enjoys no metaphysical priority over others. It is only one type of selective relations in nature. It involves indeed a specific type of organization of the referent and a specific type of community with nature. But that is true of other perspectives as well. The cognitive relation is distinguished from all other types of adjustment in that in it error exists as part of the adjustment. There is no error in physical or organic perspectives. Error is due to the striving at creative anticipation of nature by means of ideas. This is the realm of adventure of creative mind.

It has been said that thought is talk, and it is true that social communication is a necessary medium for the development of thought. But we cannot say that talk is thought. We know of too much talk that does not reveal thought. Language and communication are not sufficient to account for thinking. There must evolve in nature a structure with its own peculiar restlessness. Thought is evolved as an expression of the urge for life and a more abundant life. It is an aspect of vital adjustment and itself is a vital function as much as digestion. For thought to come to actuality there must evolve not only certain cerebral structures and certain vocal structures, but also a social milieu for expression. Thought presupposes the urge of our whole biological history, of our social milieu, as this becomes a part of us, and the immanent cosmic *eros* or love for form. It analyses our qualitative experience. It particularizes or universalizes its selected qualitative aspects according to its interests. Particularity is no more given than universality. Both are predicates in significant discourse. By means of language, thought fixates qualitative experience into "essences" or universal predicates, and it creates ideal structures by means of which it tries to unlock the inner nature of things. But it has no key

[7] See the author's *Truth and Reality* (1911), pp. 138–141.

to structure except function and its conceived structure must prove relevant to function as revealed in our experience of nature. As part of vital activity, thought first of all works for the furtherance of biological wants, but it may emancipate itself from these. It may become absorbed in the interest in comprehending the structure of things and become pure science, or it may set itself to incarnate form in objects which shall satisfy its feeling for beauty, without reference to utilitarian demands, and express itself as art. But as an activity it must be grasped in its kind and cannot be reduced to the simpler activities of reflex and habit. As a vital activity, thought involves the whole organism with the whole gamut of structures and activities – sensory, motor, affective, mnemic, ratiocinative – in a milieu of nature which includes society.

Thought is deeper than rationalization. It is an urge born out of the unconscious depths of our racial and personal life in the cosmos, seeking light and meaning in an apparently confused world. At the lowest level of nature things exist in a vague, undifferentiated mutuality. But in the course of time, through an immanent urge in nature, structures and organs become differentiated, so as to respond more adequately to the environment and make a fuller life in nature possible. So senses are constructed. Then other structures are evolved to respond in time as well as in space, such as habit and memory. At length there is the consciousness of the small voice of spirit, midst the babel of impulse. There is the reaching out for form, the fashioning of intelligence, the feeling for beauty. Who can doubt that spirit is as truly part of nature's striving as are the structures and organs which have to do with our primitive biological needs? And does not spirit require its own characteristic environment and its own characteristic satisfaction? At any rate there are those who do not live by bread alone and who regard the primitive biological needs as mere means to the attainment of the values of spirit – the values of truth and beauty. If we call such satisfactions a "balanced metabolism," they at any rate involve a level of organization and satisfaction different from that of a sound digestion, though this is not to be despised. They mean the establishing of a type of *rapport* with the environment other than mere physical and biological adjustment. As qualitative satisfactions they are a whole-response to nature of another order – the response to spirit in nature.

Since the ideal aspects of our experience of nature are as real, as much part of nature, as the sensory, the ideal aspects imply mutuality with nature that is appropriate to their character. If we are interested in what sort of universe makes our sense-aspects possible, we should be interested in what sort of universe makes our spiritual experience possible. It is true that in either case human nature is part of the situation and gives its own character to the result. Our experiencing of nature and our interpretation of nature are human, all too human. We cannot speak for God, as Kant truly saw. But we must not forget that human nature is part of the cosmic matrix and must be understood in that matrix. This is as true of the spiritual level of thought and

appreciation as of the level of sense. In either case, it is the cosmic matrix which furnishes the stimulus to adjustment and at length rewards life with such rapport as its capacity for responsiveness makes possible. Beauty is not all in the percipient, though the percipient must be properly organized. While the appreciation of beauty is an organic adjustment, it is not all organic, but an adjustment of the organic to the harmony in nature.

Section Four

Evaluations of Boodin on Pragmatism

REVIEW OF TRUTH AND REALITY

Charles B. Vibbert. "Review of John Elof Boodin, *Truth and Reality: An Introduction to the Theory of Knowledge*." *Journal of Philosophy, Psychology and Scientific Methods* 12.2 (21 January 1915): 48–53.

The aim of the volume before us, as the sub-title implies, is primarily epistemological. The author promises in the preface to follow it up shortly by another volume on metaphysics, to be entitled "A Realistic Universe," where some problems suggested in this book will be dealt with more fully.

The author's position is already known to the philosophical public, since eleven of the seventeen chapters which make up the volume have already appeared in substantially their present form in various American philosophical journals. Professor Boodin makes open profession of pragmatism, but pragmatism of a very special brand, the pragmatism of William James to whom the volume is fervently dedicated. In fact, one of the chief merits of the presentation is the attempt made to rescue pragmatism as a method and as a theory of truth from the unwarranted developments of the instrumentalists and the humanists. It is safe to say that no other disciple of James has presented his position so fully and so accurately.

The work is divided into four parts, in which are taken up at about equal length the four problems: I. "Truth and Mental Constitution"; II. "The Nature of Truth"; III. "The Criterion of Truth"; IV. "Truth and its Object." Under these captions all the main problems bearing on the nature, function, and verification of reflective thought, to which the pragmatic controversy has called attention, are not only touched upon, but, for the most part, treated in full.

The plea for philosophical tolerance with which Part I. opens, based as it is on our differences of temperament and the different demands which the various aspects of our nature make on the world, is strongly suggestive of the like indirect plea for pluralism in philosophical doctrines at the opening of James's "Pragmatism." "Why should not every sincere man express his life in a philosophy that seems reasonable to him at the time of its experience now? Thus not only man, but the different moments of man, become the measure of all things.... Agreement and sameness are practical necessities for the sake of common action, but outside the elementary qualifications for social life they are the bane of progress."

The author's fundamental assumption with regard to the nature of mind, an assumption which dominates the entire volume, is implied in the very title

of the second chapter, "Mind as Instinct." This assumption, not phrased in exactly these words by the author, may be elaborated thus: Mind is primarily an active process; consequently its various stages or levels of development, its structure and its forms, must be accounted for in terms of this activity. In explanation of the genetic development of the three main stages of mind this assumption takes on a more specific form: "All our fundamental adjustments or categories, viewed from the point of view of individual development, are instinctive or organic adjustments; the stimuli, which constitute the environment, are simply the occasion for calling into play the structural tendencies of the organic growth series." Corresponding to these stages of development we may expect to find sets of forms or categories which serve as the structural framework of each, and under which, accordingly, knowledge at its various levels is organized. The table of categories, though suggested by Kant, must be corrected by and brought into accord with the splendid work done by recent genetic psychology. The levels of intelligence and the corresponding categories are: (1) The Perceptual Level, with its categories of space, time, and habit; (2) The Level of Reproductive Imagination, involving continuity, similarity, and set; (3) The Level of Empirical Generalization, implying the four syntheses of quantity, quality, cause and effect, and individual interpretation or substance. Just what the relation is between these sets of categories and the genetic stages set forth in the preceding chapter is not made clear. Furthermore, though the author insists, in accord with his fundamental assumption, that intelligence is primarily conative, that intelligence remains an instrument, however elaborate, for fulfilling the demands of the will, the relation of these categories to the volitional activity is not sufficiently elucidated. Are they, like the postulates of truth considered later, posited by some will-to-be-intelligible somewhat after the manner in which Professor Rickert conceives them? Or are they stereotyped modes of reacting upon the given material of experience? Or are they, as Kant conceives them, the conditions which alone make possible our experience such as it is? The author could, no doubt, clear up these points by further elaboration. As the presentation stands, it is defective.

In part II., under the caption "The Truth Process," the author differentiates reflective thought from types of meaning of a simpler sort such as perception and associative memory, and from other forms of ideal synthesis, like thought, which involve ideal construction and organization by purpose, such as esthetic wholes; then, after pointing out the limitations of language as an adequate expression of thought, he criticizes some of the recent psychological work on thinking on the ground that the thinking investigated is not real thinking, but only association of ideas. Likewise the discussion with regard to the possibility of imageless thought is bootless since it is not the type of imagery which characterizes thought, but selective leading. The thought attitude implies the active leading or control of processes by a conscious, organized conative

purpose. The conative leading constitutes the core of thought, not the imagery. Just as bootless is it to characterize thought by the feeling of effort which accompanies it, but may or may not come to consciousness. The truth process may now be defined more precisely, first with reference to its structure or morphology, secondly with reference to its content. The judgment, the forms of which constitute the morphology of thought, is presented as a fundamental unity of thought moments which starts with negation or the need of fresh adjustment, whether as the result of practical necessities or baffled curiosity; it proceeds through the trial stage of ideal construction and verification (hypothetical judgment), developing in advanced knowledge into the disjunctive schematization of alternates (disjunctive judgment): and its perching-place, after the long or short flight, is the adopting of a provisional scheme for conduct (categorical judgment). The concept thus becomes not the beginning of the thought process, but its terminus. It is the completed form of the categorical judgment at any stage of the history of thought – a conscious definition, a definite programme of action. Turning now to the problem of the content of truth, Professor Boodin accepts Locke's doctrine that the process of truth has to do primarily with the activity of relating. From the standpoint of *psychological* analysis, the attempt to analyze relational consciousness into kinesthetic images and sensations confuses the physiological concomitants and their sensations with the nature of the thought process itself. From the standpoint of *epistemological* analysis, we are confronted with the question whether these relations are to be taken as internal relations or as external relations, a question which plunges us into the controversy which has raged between the neo-realists and the absolute idealists. In solving this problem our author appeals to a principle, christened pragmatic, of which he makes large use in resolving other doctrines which appear to be mutually exclusive – the principle that we must acknowledge the universe to be what we must *take it as*. If now we accept this principle arid appeal strictly to our finite experience only, we must take the universe as in part implying internal relations or relations of teleological significance; in part as capable of being taken in terms of external relations, or at least external to our finite and fragmentary purposes. The pragmatic movement has emphasized the function of truth in relation to life as a whole, the regulative function of thought in experience. But is this the whole story? Does not the truth process always presuppose also certain laws or postulates which, whatever their origin or significance in the structure of the real, must still be acknowledged if thought is to pursue truth? There are four such postulates: the law of consistency, the law of totality, the subject-object law, and the law of finitude. The epistemological necessity of these laws can only be proved by showing that, in the actual social procedure of thought, no instance which does not imply them can be cited without making truth impossible, which would show that they must hold for all cases of truth. They have ontological

necessity only in so far as we admit truth as an ontological fact in the universe. Thought, then, we must conclude, is an activity of the will, predetermined as regards its form by certain presuppositions which are posited by the will to think. It is not the only activity of the will. The will may be instinctive in its activity, it may be perceptual, it may be guided by concrete images, it may dream. But when the will sets itself the task of thinking, whether for purposes of practical necessity or for the enjoyment afforded by the game of thinking itself, the will accepts or postulates certain norms, a constitution of thought.

In Part III., by way of introduction to the central problem of pragmatism, the criterion of truth, the author orients us into the movement by sketching its history "From Protagoras to William James." Things exist and are what they are because of the differences they make to human nature – this is the essence of pragmatism. In other words, we can only speak of those things as existent that make a difference to human nature, either directly as immediate experience (the contention of Protagoras), or indirectly as assumptions needed to account for such immediate experience as our perception with its microscopes and telescopes furnishes us (the contention of Plato). Pragmatism may be further defined as scientific method conscious of its own procedure; and if it be maintained that, in this case, it has nothing new to offer, it my be replied that there is always need of a renaissance of the pragmatic consciousness in science. If, now, we attempt to define pragmatism in terms of what it is not, we can show that it does not imply that the true and the useful always coincide; it is not equivalent to humanism, the doctrine that since reality must pass through human nature in order to be known, therefore the nature of reality is made over in knowing it: it is not committed to the instrumental point of view as regards concepts, for truth must always be imitative of its object to a certain extent; it does not necessarily fall on the side of realism except in so far as it intends a world beyond our finite cognitive purposes. Can there be any final distinction between meaning and validity? If we use meaning in the sense of pragmatic meaning – the difference which a situation makes to our further procedure, whether practical or formal – then there can be no final dualism between the meaning of a proposition and its truth. The meaning which molds itself on the constitution of reality, which leads to the intended consequences, is precisely the *valid* meaning. Though both realists and idealists have joined in maintaining that truth is agreement with reality, they alike fail to break up reality and so fail to show the different meanings of agreement, according as truth is a copying process or an artificial device. Agreement *means* agreement only when we intentionally select with reference to the realization of some purpose. Agreement has a twofold significance: (*a*) the instrumental relation of the knowing attitude to its object and (*b*) that of sharing, to use a Platonic term. (*a*) In so far as reflective thought sets its own conditions, irrespective of the inner meaning of the processes to which it refers, aiming at prediction or

control of the object as a means to its own purpose – in so far thought is instrumental. (*b*) But some objects of knowledge must be recognized as having a meaning of their own, a rational purpose and value which we must acknowledge. The fulfilment of our purpose here is conditioned upon partaking of an extra-individual realm of meanings, respecting them and sympathizing with them. Though it is universally recognized now that we must arrive at truth through our human purposes, though human nature with its purposive selection determines the *meaning* of the object, does it, as cognitive, determine the *existence* of the object? No: human nature contributes to nature the significant system of cognitive relations; it does not contribute existence.

In defining the relation between truth and its object in Part IV., the author develops his own standpoint of pragmatic realism. Realism is an epistemological attitude and has to do with the relation of the cognitive meaning to its object. Realism does not deny that objects to be known must make a difference to reflective experience. What realism insists is that objects can also exist and must exist in a context of their own, whether past or present, independent of the cognitive subject; that they can make a difference within non-cognitive contexts, independent of the cognitive experience of which the latter *a posteriori* must take account. In reply to the objection that to think an object is to think it as experienced, therefore it must be experienced – an objection based on the assumption that only like can make a difference to like – the realist insists that there can be different universes of experience which can make a difference to each other; and also that what is non-reflective or non-meaning can make a difference to our reflective purposes, or *vice versa*. Objects, then, enter into different contexts of which we may distinguish three types: the physical context, the social context, *my* context; and each of these contexts can make a difference to one another. In the two final chapters Professor Boodin paves the way for his promised volume on "A Realistic Universe" by making a plea for metaphysics and defining its three main problems, the problems of knowledge, of existence, and of value; and by pointing out the reality of religious ideals. These chapters are suggestive as indicating the direction in which this type of epistemology leads; they are not essential to the main argument of the book.

Professor Boodin agrees with the rank and file of pragmatists in insisting on the conative, purposive nature of mind, in conceiving of truth as an affair of leading, in making the test of the real that which can make a difference to something else, in maintaining that reality is what we must take it as, in appealing to the immediate. It is primarily in his anti-humanistic and anti-instrumental doctrines that we come upon new points of view: in the distinction drawn between the two types of agreement, instrumental and sharing; in making significance a much narrower term than existence; in the emphasis on the various types of contexts into which the same object may

enter. All these doctrines, be it noted, make for realism and away from idealism. The realistic motive dominates the volume.

The appeal to the immediate, usually under some such form as this: "The real is what we must take it as" (Cf. pp. 295, 301) is constantly made. But just what is meant by the immediate is left as vague in this argument as in all other pragmatic writings. In the early part of the book the immediate seems to be identical with the perceptual, as James tends to maintain; later on conceptual construction is included under the immediate; still further on in the argument the immediate is made to include that type of agreement known as sharing. Such ambiguity may make for a pluralistic outlook upon the world; it certainly does not contribute to clear thinking. It is to be hoped that the author will clear away in his later work the fog which as yet envelops the immediate.

REVIEW OF A REALISTIC UNIVERSE

F. C. S. Schiller. "Review of John Elof Boodin, *A Realistic Universe*." *Mind* 28.3 (July 1919): 362–365.

Prof. Boodin's Preface tells us that "this volume on metaphysics is the sequel of a volume on the theory of knowledge, entitled *Truth and Reality*, which was published in 1911. The two volumes furnish a survey of the field of general philosophy from the point of view of pragmatic realism." Its attitude is "an attempt to apply scientific method to philosophic problems," and "the pragmatic method as applied to metaphysics means that we must judge the nature of reality ... by the consequences to the realization of human purposes, instead of by *a priori* assumptions." From his introductory chapter we learn further that metaphysics, since to philosophize we must think, implies that there are valid rules of thought, and "a faith in their fitness or relevancy to our world" (p. xv). Unlike Mr. H. G. Wells, he entertains no 'skepticism of the instrument', but thinks "we must trust the instrument at the outset," which is "fundamentally an attitude of the will." So "somehow the laws of thought must be the laws of things," but they "must be tested by their success in actual use" (p. xvi). So our "faith in the relevancy of thought," must be confirmed. Similarly, though philosophy "exists in part for ennobling life," and "must satisfy our emotional and volitional nature, as well as our intellectual," it is yet "science not art," nay "the oldest of the sciences – the mother of science." Actually, however, Prof. Boodin's method is to attempt to solve the problems of metaphysics by selecting five scientific conceptions now current, and following them whithersoever they lead. These he believes to be irreducible into terms of each other (p. 385), and regards as "the summa genera in the reflective evaluation of the character of the world" (p. 391).

His list is composed of (1) *Being*, "the stuff-character of reality"; (2) *Time*, "the flux-aspect" of reality; (3) *Space*, which is "more than a conceptual limit," since "interstellar space seems to be practically pure"; (4) *Consciousness*, since "it is absurd to suppose that our conative attitudes and organized meanings become atoms and molecules when we are not aware of them," and which is conceived as "a neutral light," that "does not create distance nor does it create meaning" (p. 399), and is "always an aspect of the situation which we call *interest*" (p. 400); (5) *Form* or direction, which raises the question of validity, and "must somehow condition the survival of structures" (p. 403)

Now it is evident that a method like Prof. Boodin's has very considerable attractiveness. To make the achievements of modern science relevant to the secular perplexities of philosophy gives to metaphysics an air of solidity in which its fine-spun speculations have usually been lacking, even though Prof. Boodin's five categories may look to some like five bluebottle flies caught in a web of gossamer, and suggest a doubt whether it can sustain such weighty bodies. However, Prof. Boodin writes with a refreshing sense of realities, and with a praiseworthy clearness and directness of style, and is withal so good tempered and tolerant about his metaphysical selection (as a genuine pragmatist should be!) that he very effectively disarms his critics. Hence the remarks that follow should be taken less as objections than as inquiries and cues for reflexion.

So long as a philosopher shrinks from undertaking the (probably futile) task of 'deducing' his categories and supplying a rigid proof (almost certainly impossible) of their ultimateness, he cannot in reason require every one to approve of his selections, and has in principle to admit that as systematic, impressive and satisfactory structures can be erected out of different materials as out of a different arrangement of the same materials. Tastes differ in metaphysics as in love, and Prof. Boodin's 'Big Five' do not appeal to every one. Thus 'Being' has seemed pretty null and void to others besides Hegel. Moreover, 'Value' penetrates it, transforms it, and perhaps finally absorbs it. 'Change' is the presupposition both of 'Space' and of 'Time' and pervades them both; it seems clear that the experience thereof is far more ultimate than the abstractions out of which we build up our scientific conceptions of Space, and Time. 'Consciousness' is either mere philosophic jargon, or the thinnest possible abstraction from concrete personality, while the latter may be found in ultimate analysis to be as all-pervasive as 'Value'. 'Form' is a category which it was natural for the artistic craftsmanship of Greece to hit upon, but it has never shown itself susceptible of scientific definition. So it was never fully analyzed and remained full of picturesque obscurities. Since then it has developed an abundance of tantalizing ambiguities and become as elusive as 'validity' or 'law'. To justify its prerogative use, it hardly suffices to declare that "Plato and Aristotle have shown that in higher ideal realization it is not necessary that the form itself should move in order to produce movement, that is, that the form should possess energy. The beloved may be indifferent to the lover. Beauty moves us by its perfection" (p. 378). Only, surely, if it does not disdain to reveal itself to us. And if it reveals itself in any way, if only by agitating ether waves, it *is* moving and acting on us in the scientific sense. So that the 'unmoved mover' no longer has any scientific meaning.

But an even more fundamental question may be raised about Prof. Boodin's method. Our existing stock of ideas, including not only those with a recognized scientific status, but also those employed by common-sense, and the ideals, idols, and speculations of philosophy, has been accumulated by our

past dealings with reality, and has resulted from our protracted efforts to come to terms with it. The most, therefore, that can be claimed for our idea is that they should be adequate, *collectively*, to the manipulation of the world for human purposes. But it does not follow from this contention either that any particular selection from them should be adequate, or that, having been evolved for different and only distantly related purposes, they should all be concordant and consistent with each other. Accordingly, we find that different methods suit different subjects (*e.g.* mechanism and teleology), that conceptions used in different subjects are incompatible with each other, and that conceptions may continue in use which are inherently self-contradictory, *e.g.* that of an omnipotent and yet benevolent deity. For if a conception is a psychological conflation of emotional demands and vital attitudes, this is quite natural; its 'self-contradiction' will then merely embody the conflict in the soul that generated it. Such discrepancies, however, are not a serious scientific inconvenience; for the sciences do not claim finality for their conceptions, and can continue to cherish the hope that they will hereafter grow harmonious, while in the meantime the use of one conception for one purpose does not exclude the use of another for another. Metaphysical systems, however, in so far as they aim at consistency, must make selections, and selections imply alternatives and alternatives a reference to desirability and comparison of values. Does it not follow that no metaphysic that has relation to any empirical material can lay claim to cogency or finality?

It has, however, like every scientific conception, a duty laid upon it which it cannot disclaim. It is bound to make quite clear and unmistakable the meaning it attaches to the terms it operates with. And it will usually be found that metaphysicians leave some of their essential terms in impenetrable obscurity. In Prof. Boodin's case this obscurity would appear to surround especially his notion of 'validity'. In particular its relation to 'value' is not explained, though page 188 makes a convenient distinction between 'value' (subjective), and 'worth' (objective). According to page 137, value is 'made possible' by 'consciousness', which here does not seem quite so 'neutral', as it is officially supposed to be. But how is 'value' related to 'validity'? 'Validity' would seem to be objective; yet on page 340 it has degrees, like 'value'. And on pages 339–41 we are treated to the old Platonic contention against Protagoras, dog-faced baboon and all. There must be an absolute standard, absolutely 'valid'; for otherwise the possibility of 'validity' is denied, "all argument must stop," and "one opinion is no truer than another." If no notice is taken of the Protagorean reply which, as I have shown in my *Plato* or *Protagoras*? is given and *not* refuted in the *Theaetetus*, the logical conclusion is that "radical empiricism is impossible as our ultimate philosophy," because with it "no ideal could be valid." Thus 'validity' becomes vital to Prof. Boodin's scheme, and the *deus ex machina* which assures it is 'form'; but I can find no reason why 'forms' should pre-exist, and not be formed, and

transformed, in the process of the real, or why 'validity' should not arise in the course of experience out of agreements about values.

A similar obscurity besets Prof. Boodin's "valid rules of thought," and the dictum that "metaphysics implies logic" (p. xv). Aye, but what sort of logic? The traditional Formalism, which sacrifices all meaning to'validity' it utterly fails to realize? Or a more reasonable sort, which prefers the real values of 'material' truth to unsatisfied craving for 'formal validity', and is content to conceive its 'laws' as the postulates of intersubjective intercourse which can be *hypothetically* applied to the world of things and used successfully to calculate the behavior of *some* of them for some purposes? I cannot but feel that there are dark corners in Prof. Boodin's 'realistic universe' which have never been illumined by the sunlight of a thoroughgoing pragmatism.

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THE CAMBRIDGE SCHOOL OF PRAGMATISM

Volume 4

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John R. Shook
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&

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Indiana University – Purdue University

The Foundations of Pragmatism in American Thought

The Cambridge School of Pragmatism
Edited and Introduced by John R. Shook, *Oklahoma State University*
Additional Introductions by André De Tienne, *Indiana University – Purdue University, Indianapolis*, and Randall E. Auxier, *Southern Illinois University, Carbondale*

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THE PRAGMATIC NATURALISMS OF GEORGE SANTAYANA AND CLARENCE I. LEWIS

With an Introduction by
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INTRODUCTION

Varieties of Pragmatic Naturalism

George Santayana (1863–1952) and Clarence Irving Lewis (1883–1964) were educated at Harvard University, studied primarily under William James and Josiah Royce, and became professors of philosophy at Harvard. The philosophies of Santayana and Lewis were in large part reactions to, and developments of, the views of empiricist James and idealist Royce as they contended for philosophy's soul during their years as colleagues from 1882 to 1907. Caught in the crossfire of these two giants, many Harvard graduates from that "Golden Age" of Harvard, including John Elof Boodin, Ralph Barton Perry, Wilmon Henry Sheldon, Horace Meyer Kallen, William Pepperell Montague, Jr., and Arthur Oncken Lovejoy, were similarly inspired to search for creative philosophies of adjudication and compromise.

Santayana himself added to this extraordinary atmosphere while teaching at Harvard from 1889 to 1912. Lewis took a course on Plato with Santayana, but Santayana's own philosophy apparently had little influence on Lewis's early commitment to idealism. Two years after receiving his Ph.D. in 1910, Lewis published a sharp rejection of naturalism, taking Santayana as his primary target and using Roycean principles as grounds for criticism ("Professor Santayana and Idealism," in this volume). However, Lewis did not accept absolute idealism's vision of a supreme mind whose perfect knowledge continually sustains all reality. By instead adopting a fallibilistic epistemology of empirical knowledge, Lewis gradually approached the pragmatist position of James and Charles Sanders Peirce by 1920. During those years Santayana had accepted some aspects of pragmatism as well, attached to an uncompromising critical realism.

Santayana and Lewis arrived at distinct pragmatic naturalisms by the 1930s, offering alternatives to rival systems destined to compete for dominance in Anglo-American philosophy during the remainder of the twentieth century. The primary alternatives included John Dewey's pragmatic naturalism, Alfred North Whitehead's process philosophy, the logical empiricism of the Vienna Circle, and Harvard philosopher W. V. Quine's reductive materialism. Santayana founded no school, but his non-reductive materialism lived on in the form of epiphenomenalism which has to the present day stubbornly resisted reductive materialism. Lewis's variety of pragmatism influenced Quine, who took the Edgar Pierce Professorship at Harvard after Lewis retired, and it also influenced others who looked to

empirical science as the sole source of knowledge. Intriguingly, Quine's ontology of materialism echoed Santayana's own convictions, even as Quine sought to eliminate the realms of spirit and essence that Santayana defended. Also significant is the way that Quine strengthened Lewis's fallibilistic empiricism by repudiating the analytic/synthetic distinction vital for Lewis's own epistemology.

The chasm between Lewis and Santayana on the one hand and Quine on the other opened even further concerning the status of "meanings" and "the given" in experience. It became fashionable in mid-century Anglo-American philosophy to deny the analytic/synthetic distinction and challenge logical positivism's reliance on knowable phenomenal experience. As a consequence, it became convenient to cast scorn upon the notion of "the given." When philosophers then spoke of the given, they were usually referring to an allegedly infallible type of perceptual knowledge. Quine's "Two Dogmas of Empiricism" questioned whether the foundationalist reduction of discourse to sense-datum language is possible, and declared that the very notion of the given was bound up with the spurious analytic/synthetic distinction. When Quine concluded by recommending that philosophy abandon the idea that there is a "linguistic component and a factual component in the truth of any individual statement" he was understood to be attacking not only logical positivism but also his colleague Lewis. Wilfrid Sellars, who had taken a course titled "Theory of Knowledge" with Lewis in the late 1930s, later announced his own renunciation of "the myth of the given." In "Empiricism and the Philosophy of Mind" (1956), Sellars was similarly understood as directly challenging Lewis. Sellars actually ended up fairly close to the classical pragmatists in his later years, and arrived even closer to Santayana by synoptically coordinating perception, intentionality, and rationality with scientific realism. Quine, however, was intent upon behavioristically and physicalistically eliminating concepts, meanings, and experience from reality. Only the lingering pragmatism of his fallibilistic yet realistic philosophy of science still linked Quine with his Harvard predecessors.

Did Quine and Sellars really have a target in Lewis? Lewis did hold the Kantian view that the mind approaches new experiences with a framework of meanings, and openly allied his epistemology with much of Rudolf Carnap's logical positivism in the 1930s. With Santayana, Lewis believed that there is a portion of experience for which the mind is not responsible. However, neither philosopher believed that this portion presented itself as indubitable knowledge. Both Santayana and Lewis, like fellow pragmatists Peirce, James, and Dewey, accepted the realm of empirical experience as having legitimate reality, even as reason carried belief beyond present experience. Scornful of solipsism and positivism, each of these pragmatist philosophers philosophized about the nature of the integration of human experience with wider realities. They all agreed that this integration did not

require the supreme mind of absolute idealism, and they were similarly agreed that crude materialism was inadequate. In Santayana's terms, while the realm of matter is the sole power and agency, the intuition of meaningful essences that occurs in the realm of spirit is no less real. In Lewis's terms, the organization of experience is only partially under the control of the mind's concepts. Both Santayana and Lewis find that when the mind experiences such partial of control of experiences, the mind automatically believes that these given are experiences of mind-independent existences. They also hold that the remaining task of knowledge is to discover where these existences can be coherently related with the rest of experience. Even a hallucination can be a real hallucination and explained by relating it with certain other realities. However, for Santayana and Lewis (again agreeing with earlier pragmatists), no "given" is automatically granted epistemic status as "known" and certainly not granted infallible certainty independent of the context of inquiry.

The disagreements between Santayana, Lewis, and Quine can be helpful surveyed without too much distortion by noticing that they all start from some pragmatic approach to knowledge, then endorse some type of naturalism which each believes best harmonizes with their type of pragmatism. Santayana pragmatically endorses materialism as common-sensically accepted by ordinary practical living, and then infers from materialism that knowledge occurs in the separate realm of spirit where consciousness tracks but does not influence the processes of nature. Lewis's pragmatic epistemology endorses a scientific realism of natural things that are continuous with human experience, but requires that this scientific realism cannot replace the very lived experience that science is supposed to assist. Quine holds that to know reality is to pragmatically accept one or another scientific theory about reality, and supposes that science's realities must therefore be exclusively real. Each philosopher's naturalism determines the final shape of their epistemology: Santayana's materialism ensures that knowledge impotently watches the signs of unfolding reality; Lewis's scientific realism is forbidden from calling into question the consciousness that grounds scientific inquiry; while Quine's scientism demands that cognitive and behavioral psychology eliminate consciousness and take over from epistemology the task of discovering how nervous systems transform sensory stimulations into intelligent representations of reality.

This introduction to Santayana and Lewis proceeds to discuss some selected details of their pragmatic naturalisms, as illustrated by the selections of writings presented in this volume. Of necessity, only those aspects of their philosophies that directly involve pragmatism are mentioned here. For fuller expositions of their philosophies, readers may consult the concluding bibliography. Of particular value for understanding their naturalistic pragmatisms, five books have special place. On Santayana: Henry Samuel Levinson's *Santayana, Pragmatism, and the Spiritual Life*, Timothy L. S. Sprigge's *Santayana*, and the Library of Living Philosophers volume on *The Philosophy*

of George Santayana, edited by Paul A. Schilpp. On Lewis: the Library of Living Philosophers volume on *The Philosophy of C. I. Lewis*, edited by Paul A. Schilpp, and also Murray G. Murphey's *C. I. Lewis: The Last Great Pragmatist*. For convenience, most references to Santayana's writings are to the one-volume edition of *Realms of Being*.

George Santayana: The Faith of a Materialist

Santayana preferred to use time-honored labels for key philosophical concepts and theories. The four realms of being in his materialism are the categories of matter, spirit, essence, and truth. For Santayana, matter denotes that realm of self-sufficient and efficacious power, having some key general features: matter exists in physical space and physical time, it is unevenly distributed, and it is continually changing in discrete events (*Realms of Being*, pp. 202–203). Precisely because matter is essentially active and particularized, material objects take on a procession of properties and forms, or "essences," through the flux. If matter were static and homogeneous, no specific properties could ever apply to any parts of it; since matter does in fact exemplify various specific essences over time, matter truly has these properties and so the realms of essence and truth should be distinguished from the realm of matter. A hypothetical omniscient knower would be acquainted with all exemplified essences and hence the entire realm of truth about matter's activities; for several reasons described below, any human knowledge will fall short of such absolute knowledge. Neither the realm of essence nor the realm of truth exist in their own right; essences and truths are always of some realm (material or spiritual) which does exist.

Portions of matter achieve life which struggle for brief existence within environments. Sufficiently sophisticated organisms generate conscious feeling and awareness, and thus the realm of spirit comes into existence. Santayana reserved the term "psyche" for those habits of material organisms that permit their characteristic energetic behaviors (Sprigge, pp. 95–99). Offering no explanation for why living matter should generate spirit, Santayana was content to accept this evident fact, and notes that any change *per se* is equally mysterious. The distinction between spirit and psyche is crucial for following Santayana's philosophy any further. The human psyche is responsible for our capacities of rationality, reflection, intelligence, deliberation, and the like. There are, strictly speaking, no laws of spirit, although there are scientifically discoverable laws of psyche. Unlike psyche, the realm of spirit has no causal powers or relations (*Realms of Being*, p. 332). Matter and spirit, while both exist, have no causal relations with each other. Santayana felt that he had James's weighty psychological authority backing this position, as James had argued in the 1880s that feelings like emotions are consequent upon physiological events and do not cause them.

Santayana may have been aligned most closely with other pragmatists in his first systematic work, *The Life of Reason* (1905–6). Like any pragmatist, Santayana admitted the practical effects of reasoning and frequently used the term "knowledge" to refer to practical intelligence's facility with predicting and controlling the environment. Spirit has quite another destiny as the sensuously and imaginatively appreciated spectacle of consciousness. Santayana sometimes proposed that the gradual transition from vegetative to animal life would naturally generate spirit as psyche's attention to external objects grows in importance. However, Santayana expressly rejected James's hypothesis that consciousness was a contingent development that has shown to have survival value by somehow being efficacious. Santayana chose the alternative hypothesis that the animal psyche necessarily generates spirit. Santayana's position is not identical with Descartes' dualism since the realm of spirit has no independent ontological existence but always depends on matter. Spinoza's monism may also be viewed as a forerunner to Santayana, although Santayana did not propose that spirit really is matter in some mode or manner. The label of epiphenomenalism is best for his philosophy, since for Santayana, impotent spirit cannot be ontologically or descriptively identified with any part, phase, or aspect of the material realm, but is destined to only be an accompaniment to matter's flux. Although Santayana did not hold that the past strictly determines the future, his moderate indeterminism yields no comfort to those, such as James and other process philosophers, hoping to find room for the mental liberation of free will (see for example Santayana's reply to Charles Hartshorne in *The Philosophy of George Santayana*, pp. 591–593). On Santayana's view of spirit, any mental feelings of power and control simply register developments happening in the psyche. The psyche deliberates and chooses by purely mechanical processes, and the feelings that report these processes have no role.

While disagreeing with James about whether spirit has consequences for the course of the physical world, Santayana did appreciate James's theory of belief. Santayana could never accept James's pragmatic theory of truth, but James's psychological views on belief are repeated in Santayana's notion of "animal faith." Animal faith is the natural, automatic, and common-sense belief in the knowable external world of things in the environment (Sprigge, pp. 52–54). For both James and Santayana, the common-sense world of ordinary belief should be the common ground and starting-point for the various metaphysical standpoints of idealism, representational dualism, realism, materialism, and the like. The common-sense world certainly is the starting point of all people whom metaphysicians would convert to their standpoint. In his 1890 *The Principles of Psychology*, particularly chap. 21 on "The Perception of Reality," James argues that the distinction between an external object and a perception of an object has no place in ordinary life. We simply experience the world as a surrounding world of objects to be interacted

with. We certainly do not think that we are only experiencing the mental ideas within our private minds, for example; skepticism about external things is not a natural attitude. In the course of experience, we will learn that some experiences cannot be trusted, but this doubt is learned doubt: we learn to doubt some experiences only because other known experiences are taken as more reliable. Skepticism towards all but the most certain experiences, of the sort that results from requiring too high a standard of proof, is hardly the natural attitude of intelligence. Like Peirce before him, James held that universal doubt is impossible, and that knowledge is simply the practical competence of everyday active life. Ir (1923), Santayana agrees with James that the foundation of knowledge is only naïve animal faith, not rational certainty. This practical faith operates primarily at the behavioral level of the animal psyche, which explains why this faith typically need never rise even to the level of intuition; we don't even realize, much less enunciate as an explicit proposition, how much of our environment we take for granted.

Santayana's theory of animal faith is offered as an appropriate starting place for philosophical reflection. This tactic directly challenges most of modern philosophy's preference for starting from an alleged certainty about the immediate contents of one's m

Santayana's confidence in the realm of matter, and his estimate of its general characters, is predicated upon animal faith. Strictly speaking, the realm of spirit has no direct acquaintance with matter – Santayana's naïve realism of animal faith is quite different from the naive realism of other epistemologists who adopted that label for their own empiricisms. Several of these naïve realists, such as Ralph Barton Perry, followed James's view that objects of knowledge are directly present in experience, rather than lying behind a veil of representations. On Santayana's terms, experience is of the realm of spirit, however. For Santayana, we do not have faith in the world of external objects because we directly perceive them. Quite the reverse: we take our perceptions of things to be the things themselves only because the psyche confidently engages external objects. A little reflection is all that is needed, for Santayana, to dispel the illusion raised by this sort of naïve realism. Only a "conventional" psychology would suppose that the organism's reactions to external objects are somehow identical, either ontologically or epistemologically, with any traits of the objects themselves. The psyche's adaptations to the surrounding world are within the psyche itself; external objects are external precisely because their properties are their own. Furthermore, the psyche's adaptations could not be supposed to "copy" any properties of external objects since such a coincidence would be quite unnecessary, and probably detrimental to, the proper functioning of the psyche.

Even more misguided from Santayana's viewpoint is naïve realism's false notion that mental intuitions of spirit could be ontologically or epistemically identical with features of external objects. Where intuitions are symbols of

external things, it is the nature of symbol that it does *not* crudely copy its object's features. Like Peirce, Santayana takes symbols of reality to have a triadic nature, because three things are involved: a repeatable mental intuition, a habit of the psyche, and an external object. So long as the relations are regular and dependable, the specific character of the mental intuition could be anything. For example, a rose can be a symbol of love without itself possessing any properties of love. The way that psyche's habits produce symbols is contingent (though not "conventional" as if decided by a group's decisions) but not random: Santayana holds that patterns of spirit's ideas will track psyche's patterns of habits as psyche interacts with external objects. Only in this sense does mind "correspond" first with psyche, through psyche, with external objects.

The mind's symbols for external reality, from our perceptions of the colors of things to our theories of the molecular structures of things, cannot be said to match those things' properties. That an essence intuited by spirit should precisely duplicate an essence pertaining to an external thing would simply be an extraordinary coincidence of no significance whatsoever. Only in vague generalities, conveyed by animal faith itself, does spirit possess pictures of the realm of matter: its actively powerful nature, its multiplicity and diversity, and its relentlessness. Philosophical theorizing cannot come to possess specific truths about details of the material realm, and science suffers from the same disability since its own theories cannot aspire to be literal truths. Santayana permitted his philosophy to be labeled as a "critical realism" because his confidence in the external material world was matched by his demand that only a critical philosophy could properly distinguish the mind from the material world. His contribution to the collective volume *Essays in Critical Realism* (1920), titled "Three Proofs of Realism," refused to suppose, as some of his co-authors did, that some essences in spirit represent external physical properties. These other critical realists embraced representationalism in order to account for truth, and appreciated Santayana's notion of essence because an essence could be instantiated simultaneously in both an external object and in consciousness. Santayana's essences are simply any properties or traits or forms that a thing could possibly have; not only the things that have existed and will exist in this world, but in any possible world (Sprigge, pp. 92–94). Essences can be exemplified by material things or spiritual ideas; our own acquaintance with essences comes through the medium of ideas, concepts, propositional terms, and the like, but essences must not be confused with any of those exemplifications. An essence is a universal because it is endlessly repeatable; an essence is also uniquely particular since the slightest difference to an essence results in a different essence. Though eternal and unchanging, essences do not exist; they can be given in intuition but are never the object of any sort of knowledge. Rather, essences are the very terms by which knowledge can be formulated. For Santayana, knowledge does not aim

at reproducing in spirit the essences of matter, which set him apart from other critical realists of his day.

It would be incorrect to suppose that Santayana intended to embrace a thorough-going skepticism towards knowledge and scientific theorizing. Since spirit's patterns of thought are deliberately organized to take advantage of habitual patterns of psyche's conduct, thought can satisfactorily express, without mirroring, the consequences of the organism's dealings with nature. Santayana did not develop a philosophy of science. However, he did clearly hold that science, like any practical knowledge, does not aim at presenting things are they truly are in themselves, but rather science aims at a systematic method of anticipating the consequences of various modes of interacting with things. Santayana was a scientific realist, therefore, even while he abandoned correspondence, since science is about the going-on in nature and tracks them with fair success. This view of science's instrumental nature is quite pragmatic, and if Santayana had cared to write more about science, greater appreciation by other pragmatists might have been forthcoming.

While some pragmatists did notice and appreciate Santayana's defenses of realism against idealism and his portrayal of human beings as intelligent animals struggling in a precarious world, several major points of disagreement were also obvious to all. First and foremost, pragmatists like John Dewey were highly suspicious of Santayana's essences and his predilection for passively and aesthetically contemplating them. Santayana believed that he was safeguarding the moral life by providing for a way to occasionally disengage from the practical life. Such disengagement is possible because the mind can withdraw the "intent" ordinarily infusing intuition, leaving behind a passive absorption in the essences. Rejecting James's and Royce's notion that ideas are always "plans of action," Santayana held that the mind's distinctively higher power is precisely the ability to suspend any plans. Santayana well understood that such disengagement from the purposive life directly contradicted the pragmatists' demand that the moral life could only be practical. Welcoming the opportunity to stand opposed to the lingering Puritanism of James, Royce, and Dewey, Santayana posed his philosophy as a path to liberation, a liberation from the wearying moral life.

By recasting the essence of the moral life, Santayana's version of pragmatism offered a genuine third alternative to James and Royce (Levinson, pp. 87–95). Santayana agreed with James that actual human desires and interests are the origin of value, and that reason attempts to maximize various kinds of harmonies of these personal aims. In *The Life of Reason*, Santayana looked to morality as a rational practice to harmonize among the competing interests of society members, yet he refused to search for any *a priori* ethical principles to establish universal order. Harmonies are the goal of life; but humanity should not search for some supreme harmony valid for all. By locating in social practices and institutions the rational morality needed for social order,

Santayana pointed towards cultural pluralism and relativism. However, this relativism is only *philosophical*; Santayana never recommends the disintegrating attitude of relativism towards one's own cultural norms and religion. Contradicting Royce, Santayana denied that some absolute rational standard of knowledge or morality is required to make sense of the diversity of human projects. Reason cannot dictate which essences provide the path to spiritual perfection. And while James was searching for a common mystical core to all religions, Santayana might have been the greater pragmatist when he only found a common function: to provide a space for imaginative contemplation in the face of inevitable failure and disaster for human projects. This imaginative contemplation of withdrawal is the path to the highest liberation attainable.

It is not clear whether Santayana recommends spiritual adoration of eternal ideals for everyone, as if the contemplative religious life is the best form of life. However, it is clear that religion can provide relief and happiness for many. So long as religion does not pass into superstition by demanding for its ideals a reality to compete with practical reality, religion is part of the rational life for Santayana. Pragmatists like Dewey additionally require that religion become fully practical by positively contributing to human endeavors, and demand that religion be continually reformed as a means to this end. For Santayana, religion's practical consequences are only side effects; ideals by definition cannot be criticized for being impractical. It is precisely their aloofness from the bustle of earthly life which attracts the contemplation of those desiring peace.

Santayana's praise for aesthetic and religious delight in contemplating essences was an anathema to pragmatists. Most pragmatists deplored the realm of essence as hypostatisations of mental ideas taken as static and self-sufficient. Unable to resist concentrating their attack upon essences, pragmatists wasted much effort by failing to understand them. Pragmatists use essences like any other conscious and thinking creatures. The pragmatist objection should instead have been more carefully aimed at Santayana's estimation of the value of contemplating essences for their own sake. By finding values embedded in experiences of actual things, pragmatism offered an alternative theory of ideals. Dewey, for example, argued that any religion that encourages resignation and surrender to prevailing conditions only slows progress for human happiness in the long run. Little constructive debate took place on this issue, unfortunately, despite the opportunities for fruitful comparison of views (see Levinson, pp. 199–203, 221–226).

Rebutting the charge of hypostatisation to find essences, Santayana always insisted that "nothing given exists." As much as Santayana deplored the pragmatists' reliance on experience in epistemology, he had even greater concerns over epistemologists returning to foundationalism by searching for indubitable sense-data. Some critics thought that Santayana's doctrine of

essence offered an alliance with foundationalism, but these critics failed to understand Santayana's tactics in *Scepticism and Animal Faith* and later works. According to Santayana, the more refined and pure one's sense-datum, the closer one approaches to a single essence. As possibility of error diminishes by narrowing one's attention upon some lone intuition, such as a shape or a color or sound, meanings are stripped away until only one essence dominates the intuition. The remaining essence is relationless, and so no inference can use it and no reality can be inferred from it. The essence by itself lacks existence and has no capacity to confer existence on anything else. A sense-datum therefore becomes "certain" only at the price of becoming impotent to lead back to any other reality. The foundationalist's quest for certainty thus only leads down a dead-end to a skeptical solipsism of the present moment. Santayana has no alternative path to certain knowledge to offer, and so he only can offer a different sort of skepticism: the fallible knowledge that arises from animal faith. Santayana is content to call himself a skeptic, not because we ought to refrain from believing, but rather because we only have beliefs of varying degrees of reliability short of certainty. Our body of beliefs will grow and change as we compare them to each other, and the more reliable beliefs earn the title of "knowledge." For Santayana, absolute truth pertains to the actual states of all reality, but this absolute truth is not available to human beings (see Sprigge, pp. 163–175, for discussion of Santayana's notion of truth). While useless for practical knowledge, absolute truth cannot be thereby condemned, and pragmatists should not make confusing identifications of usefulness and truth.

Santayana uses the term "experience" almost as frequently as any empiricist of his era, and he could not be accused of a priori rationalism. His credentials as an empiricist may be questioned, however. Empiricists claim that all knowledge arises from experience, where experience is understood phenomenally: the objects and events as experienced by the knower. Some empiricists go farther and claim that knowledge never goes beyond the knower's experiences; this position is phenomenalism and just a step away from solipsism. Indeed, Santayana's epistemology would be phenomenalism, except for his claim that many experiences are genuine symbols of external events that never appear in experience. Representationalist empiricism does not differ greatly from Santayana's theory, perhaps only adding that some experiences might copy features of external objects. Other empiricists, such as Peirce, James, and Dewey, hold that many experiences are directly and immediately of external objects, in the sense that experience includes some of their features. Santayana rejects this sort of immediate experience, finding it unwarranted in light of the *relativity* of experience and knowledge: experience and knowledge results from the perceiving organism's interactions with nature, and could not possible be expected to enjoy a perfect transmission of external properties which are instead *absolute*.

Santayana offers various "proofs" of realism that undertake to showing that it is rational to believe that there is an inaccessible and largely unknowable material realm beyond all experience. Unfortunately, these proofs suffer from two main problems. First, Santayana appeals to ordinary common-sense experience to certify that we believe in the material world, but what sense of experience does he mean here? He cannot be talking about experience as events within spirit itself, since according to his philosophy we cannot infer anything about reality from the contemplation of intuited essences. Of course, Santayana wants us to understand that some patterns of intuitions are genuine knowledge of external events, but such a supposition would just beg the question. Perhaps Santayana is appealing instead to the experience of the psyche; that sort of experience would be more consistent with his appeals to animal faith. However, to believe that the psyche experiences is to already believe that the material realm exists, which again begs the question. Second, Santayana's appeals to ordinary common-sense experience are not argumentatively superior to the standpoint of immediate empiricists like James and Dewey, who similarly appeal to ordinary common-sense experience to defend their view that experience is directly of its objects. Indeed, immediate empiricists would have the upper hand in this debate, since Santayana has already eloquently argued that animal faith dogmatically accepts the reality of things in experience. Santayana is in a weak position because he tries to appeal to common-sense to infer that we easily believe in an unknowable transcendent realm of mysterious matter. No one of sound common-sense actually does this, of course.

Ultimately, it is Santayana's conviction that the realm of ultimate power and responsibility must have its own intrinsic properties and traits which determines his conviction that both phenomenal experience and knowledge must forever be inadequate to, and hence quite separate from, this realm of matter. Since matter's intrinsic properties entirely capture its reality, and since spirit can never intuit these properties, spirit and matter must be quite unlike each other. This logic is evident in Santayana's debates with Dewey after the publication of Dewey's *Experience and Nature* in 1925, especially Santayana's article "Dewey's Naturalistic Metaphysics," in this volume. Santayana accuses Dewey of grounding his pragmatism on arbitrary phenomenalism, because human involvement in creating experience dooms experience to only capture the "foreground" of nature (see Levinson, pp. 218–221). Dewey accepts the relativity of knowledge; thus must he not admit that his empiricism is shallow phenomenalism? In Dewey's defense, his philosophy holds that relational properties as just as real as intrinsic properties. If experience be composed of mostly relational properties (such as color, which is the result of external light stimulating the nervous system), then such properties are good candidates for really being of nature, and not merely being trapped inside a private consciousness. For Dewey, experience can thus be a field of nature that

happens to include a perceiver. Color, for example, is not a property of my nervous system or my mind, but rather a property of the entire system of "light–reflective object–organism." Experience therefore is not superficial, but rather has depth into nature, and that depth can be extended by improved instrumentation and theoretical knowledge. Of course nature always has its own properties that do not depend on systems that include perceivers, but even while those properties are a goal of scientific knowledge, they do not have any sort of superior reality to other relational properties that do include perceivers. Dewey's empiricism attempts to overcome Cartesian dualism by healing the divide between experience and nature, while Santayana's a priori convictions about matter seemed to Dewey to lead back toward dualism.

Santayana could well appreciate that James and Dewey, like Royce and Peirce, would be unable to resist appealing to idealism to overcome ontological dualism. If only nature would so easily conform to our pleasant and useful experiences! Unfortunately for idealism, spirit finds itself in a world not of its making. Spirit needs matter but matter does not need spirit; this ultimate tragedy is also spirit's opportunity for its greatest triumph. Spirit can suspend effort and simply enjoy the unchanging and eternal essences. The most useless thing, beauty, is the spirit's salvation.

C. I. Lewis: The Rationality of an Empiricist

Lewis never strayed far from epistemology during his career. Satisfied with the position shared by James and Royce (and most of Anglo-American philosophy since Locke), that human experience is the base from which reason starts out and must return to, Lewis pursued the mind's role in creating knowledge. He had no illusions about his consuming devotion to that field of philosophy called epistemology. Lewis confesses to lacking genius sufficient for speculative metaphysics in his "Replies to Critics" (*The Philosophy of C. I. Lewis*, p. 655) but soon clarifies that "whenever I make attempt on metaphysics, it always comes out epistemology" (p. 663). The primary reason why Lewis did not attempt metaphysics apart from epistemology is because he held that philosophy does not increase knowledge of reality, but only investigates the methods by which knowledge is possible. "It is not the business of philosophy, as it is of the natural sciences, to add to the sum total of phenomena with which men are acquainted. Philosophy is concerned with what is already familiar" (*Mind and the World Order*, pp. 2–3). Metaphysics is only "the problem of the categories" by which we ascribe reality (pp. 10–11). Lewis's two great works of philosophy are *Mind and the World-Order* (1929) and *An Analysis of Knowledge and Valuation* (1946); his moral theory is presented in *The Ground and Nature of the Right* (1955).

Lewis never made any apologies for grounding his philosophy on experience, even as the tide of philosophical fashion turned against him.

Like John Dewey, Lewis witnessed how the initial phenomenalism of logical positivism, somewhat congenial to his own standpoint, evolved into a confident physicalism during the 1940s and early 1950s. Lewis rebuffed this new physicalist empiricism and its associated "linguistic turn," as it tried to eliminate reference to experience with appeals to pieces of language such as observation sentences, or to modes of behavior. "To my jaundiced eye, this behaviorist dialect is a somewhat muscovite methodology for disallowing any mention of the obvious facts of life which they perversely refuse to recognize" (p. 664). A philosopher like Lewis, anxious to integrate meanings, norms, and values with modern science, could not respect physicalism. His rejection of physicalist empiricism must not be construed as any sort of disrespect for science itself. Lewis celebrated science's protean character of continually making and re-making ever more imaginative theories. However, science is unstable ground for erecting permanent decisions about the ultimate traits of reality. Lewis recognized early that the very mutability of theories might seem an opportunity to replace experience-talk with some other language-scheme. He warns those who would in Orwellian fashion eliminate the thing by eliminating talk about the thing: "...let us not abdicate to those crypto-materialists who think that if we can be prevented from using any word which applies to immediate experience, or any factor in it, we may eventually forget that there is such a thing" (p. 665).

Lewis began his career as an idealist under Royce's tutelage. Proficient in idealism's tactics for transcending the immediate experience of the present moment, Lewis argued in his dissertation that the real object in experience is always conceived as having a reality that extends beyond its momentary presentation to a knower. Perceiving a thing as a real object imaginatively categorizes it as a certain type of thing having further related properties capable of investigation and verification from other perspectives and under certain conditions. For example, perceiving the moon is the perception of a spherical object, conceived as having a far side that could also be observed under some other specifiable conditions. Lewis, following Royce's lead, regards conceptions as purposive, in a double sense: (1) the transition from a perception to a conception involves the mind's voluntary role because the mind chooses how to categorize a perception as a perception of a certain kind of object; (2) the conception of a certain thing always involves that thing's further properties that could be revealed in future possible experience if the perceiver decides to pursue their observation. Lewis further stipulates that (3) the real object always has observable properties that outrun finite possible experience, so that finite creatures will never completely know an object, and that (4) no completely unknowable object could be conceived as real. Lewis retained these four principles in some form during the rest of his career, regarding them as the foundations of an epistemology which integrates key insights of pragmatism, realism, and idealism.

Lewis made an early and permanent departure from Royce's absolute idealism by refusing to follow Royce's arguments that we must conceive the real object as ultimately knowable by an actually existing perfect and absolute mind. It is not necessary to regard the absolute mind as actually existing; it is sufficient to regard the real object as hypothetically knowable in some idealized infinite process. Knowledge is ideal in the sense that it aims at an ideal of reason, and not in the sense that an ideal mind actually possesses perfect knowledge already. Here, Lewis follows Kant rather than Royce (Murphey, pp. 59–60) by regarding such an idealized knowledge as a regulative ideal rather than a constituative ideal. This stance against Royce only returns Lewis to the general standpoint already occupied by Charles Peirce, who had defined scientific truth as that knowable by an idealized community of inquirers having taken inquiry to its furthest possible extent. In the early 1920s Lewis took advantage of his access to Peirce's papers at Harvard to discover his connections with Peirce's pragmatism, and also to reconsider the legacies of James and Royce. In his "Autobiography" Lewis relates how this familiar ferment settled into his first great work, *Mind and the World Order*, where he classified his philosophy as "conceptual pragmatism" (*The Philosophy of C. I. Lewis*, p. 16–17). However, Lewis also knew where he disagreed with James and Dewey on truth, since they were content to label as truths the piecemeal and finite experiences of one's predictions and verifications. While those pragmatists made truth seem too easy, the New Realists such as his teacher and colleague Ralph Barton Perry made reality too remote. By opposing idealism with their contention that some realities may exist completely beyond any possible experience, they seemed to demand the conception of something transcendental that cannot be conceived. Such an unknowable *ding-an-sich* no longer had a respectable place in philosophy, Lewis was convinced. This position on the unknowable informs Lewis's accusation in "Professor Santayana and Idealism" that Santayana likewise demands belief in an inconceivable realm of matter. Since Santayana holds that credit goes to the essences for supplying intelligibility to material things, matter itself must be conceived as utterly formless and indistinct, an impossible mental feat.

By aligning his epistemology with the pragmatist view that the mind actively and purposively organizes the flow of experience, Lewis creatively developed his broadly Kantian standpoint. Complicating Lewis's efforts was his conviction, shared by most of his contemporaries, that the category of the synthetic a priori is empty because the a priori coincides with the analytic. It additionally seemed obvious to Lewis that a mind that can impose its schema on new experience must be a mind wielding organizing categoreal schemes impervious to contact with that new experience. If organizing schemes are partially modified by new experiences upon meeting, they would soon fail to impose any consistent and predictable patterns on experience. Because

experience evidently displays consistent and fairly predictable patterns, organizing schemes of categories must be independent of experience: they are a priori, and hence they also must be analytic. This position on the mind's powers presented Lewis with a major difficulty, wide shared among neo-Kantians, because analytic a priori propositions seem so platonically aloof from sensation. In what manner does the mind decide how to apply analytic a priori propositions to the flow of experience?

Lewis's answer lies in his pragmatic notion of the mind's voluntary application of a concept to a presentation. The mind imposes a conceptual interpretation on some given portion of experience, and can then connect that portion with other portions (past, present, or future) because that concept is already analytically connected to other concepts. To refer again to the example of seeing the moon, if the mind categorizes a portion of qualitative experience (the "given") as "the moon," then the mind already has a secure path from "moon" to "spherical object" to "facing curved side plus hidden curved side" to "hidden side could be observed from a position behind it." The final stage in this example leads to a future possible experience. The full process from initial categorization to final verification is fallible: although the logical connections between the concepts are analytic a priori, they do not dictate the outcome of any verification attempt. Furthermore, if falsification occurs instead, the rational mind should revise its conception of the explored object, but no modification to the conceptual connections need occur. Two additional points must be emphasized. First, Lewis clearly states that the given is never isolatable and detectable in ordinary experience: we never perceive the given in isolation from all concepts. Rather, ordinary experiences are fused unities of givenness and conceptualization, because the mind busily categorizes everything to at least a minimum degree where its attention is focused. Like Peirce's instances of qualitative firstness, nearly pure givens may only reside at the very margins and fringes of consciousness. The effort of attention and abstraction required for "discovering" a pure given in experience gives away the game: that allegedly pure given is instead a careful product of rigid conceptualization and hence is still the object of fallible judgment. Even an example like "this patch of red here and now" displays conceptualization and categorization. Second, because the given is a constituative element of experience, no knowledge of the given is possible. Lewis is a sophisticated post-Kantian empiricist, and not a sensationalist or sense-data empiricist seeking indubitable foundations in experience to ground all other knowledge.

Some further discussion of Lewis's controversial notion of the given is required here. Lewis's confidence that there is an independent element of givenness in experience has long been comforting to empiricists. When Lewis was beginning his career, many idealists (including Royce) regarded this notion of givenness as a serious threat, for they characteristically denied the reality of anything having origins independent from all experience. How

could an empiricist prove the existence of this givenness? By explaining that the given cannot be an object of knowledge, Lewis placed himself in a vulnerable position. Idealists easily dismissed such givenness as unknowable and hence illusory; mind, they inferred, must accordingly be somehow responsible for both the content and conceptualization of all experience. Lacking any forthright knowledge of the given, how could Lewis argue for its reality? Lewis constructed an argument from the pragmatic principles about the mind's own powers. Precisely because there are many ways to organize experience, we grasp that the mind's operations are variable. Lewis's insight in the 1910s that even logical systems are free constructions of the mind, each just as "logical" as the next (for a discussion of Lewis on alternative logics and possible worlds, see Murphey, pp. 83–102) heightened his belief that conceptual systems do not automatically apply to reality. Yet we simultaneously grasp that the mind encounters elements in experience, the "given," not of its own creation. The mind works with raw materials that are not infinitely plastic, but rather resist to some degree. The experience of shock and surprise demonstrates that the mind does not have complete control over experience.

Since the mind cannot fully anticipate the onrushing flow of experience, but instead has diverse systems of concepts to alternatively apply as purposes warrant, we experience our intellectual efforts as interacting with something not of our own creation. This supplies knowledge's objectivity: our theories are continually tested against reality. Kant earnestly defended synthetic a priori judgments as his best answer to the question of how successful prediction of future experience is possible. Lewis's alternative explanation of successful prediction is instead an account of the mind's gradual trial-and error organization of experience that preserves successes over time. To the ultimate question, why is reality intelligible at all, Lewis offers no answer. Apparently new experience is not so chaotically unlike past experience as to completely overwhelm our current categories, but the reason for this is obscure; we still live in a somewhat Humean universe. For Lewis, it is epistemology's task to study the mind's role in knowledge, and not to speculate upon ultimate cosmological matters beyond knowledge's reach.

Lewis did not develop a complete philosophy of science, remaining focused on the general features of empirical knowledge. He did defend a type of scientific realism, offer a pragmatic justification for induction in *Mind and the World-Order*, and sketched a theory of probability in both *Mind and the World-Order* and *An Analysis of Knowledge and Valuation* (on induction and probability, see Murphey, pp. 161–168, 281–290). Lewis's departure from the typical anti-realism of empiricism deserves extended comment here. Lewis argued that it is possible to acquire (fallible) knowledge of non-observable entities postulated by science. Against all positivisms, this position on non-observables endorses warranted belief in the reality of such non-

observables, and hence for Lewis realistic conceptions of those objects can be rational. When science postulates an entity too small (or too large, or too distant, etc.) to be detectable in experience even if aided by instruments, Lewis denied that the meaning of that entity is reducible to its effects. It is sufficient that the conception of the entity is objective: that it is conceived as an object having specifiable properties and effects under certain conditions, permitting the imagination to conceive how it could be observed (even if we cannot imagine how to make such observation technologically possible). Lewis in effect endorses scientific realism towards those entities which scientists conceive as objects having their own properties and effects on other objects. Against logical positivism, Lewis accordingly finds that a concept like "electron" has a quite clear meaning, despite the fact that no reduction to actual observations has been accomplished.

A common tactic of anti-realistic philosophies of science has been to argue that no probability of correctness can be assigned to any theory about unobservables (which use what Lewis called "non-terminating judgments" about these real objects), because a potentially infinite number of alternative hypotheses might be constructed to explain the same finite set of data (which are expressed in what Lewis termed "terminating judgments" that rest on the given, similar to "observation sentences"). Lewis did not adequately deal with this anti-realist challenge; the complexities of what would now be called "abductive inference" eluded him. He took for granted the questionable notion that successful predictions increased the probability of a hypothesis. Popper's idea that special sorts of confirmations, such as outcomes of crucial experiments in which rival theories predict contrary experimental consequences, does not appear in Lewis's work.

Empirical knowledge is viewed by Lewis as a system of interrelated conceptual systems which are all used in some way to guide our predictions about the consequences of our deliberate actions. Lewis held that objectivity is achieved when these systems are evaluated in light of their capacity to provide such practical guidance into the future. Lewis recognized (as did Peirce, James, Dewey, and Santayana) that scientific reason is an evolving spectacle of competing and mutating theoretical systems attempting to increase the coherence and predictability of lived experience. Lewis followed this pragmatic line of thought to the conclusion that analytic propositions may also be *a posteriori* because experience can (indirectly) show conceptual relations to be inadequate to reality. Relations between concepts can be analytically applied as rigid organizers of experience and under such conditions they could not be *a posteriori*. However, under other circumstances, alternative systems of conceptual relations can be applied, by individuals but more usually by communities. For example, a scientific community can make such decisions, and in this sense concepts and conceptual relations can be conventional. Under pressure from unexpected experience, a scientific

community may pragmatically re-organize a theoretical system of concepts, abandoning and replacing some analytic propositions in the process.

> ... the whole body of our conceptual interpretations form a sort of hierarchy or pyramid with the most comprehensive, such as those of logic, at the top, and the least general, such as "swans" etc., at the bottom; that with this complex system of interrelated concepts, we approach particular experiences and attempt to fit them, somewhere and somehow, into its preformed patterns. Persistent failure leads to readjustment; the applicability of certain concepts to experiences of some particular sort is abandoned, and some other conceptual pattern is brought forward for application. The higher up a concept stands in our pyramid, the more reluctant we are to disturb it, because the more radical and far-reaching the results will be if we abandon the application of it in some particular fashion. (*Mind and the World-Order*, pp. 305–306)

Lewis's portrait of scientific progress is quite similar to Quine's conclusion to his story of the "web of belief": even a theoretical web's core propositions like scientific definitions of basic terms, axioms of logic, or premises of mathematics might require modification or replacement if more accurate empirical predictions are secured as a result. But the fact that such core propositions are indirectly answerable to future experience does not mean that they are actually synthetic. As Lewis emphasized, whether a proposition is analytic or synthetic, and hence whether it may be a priori or a posteriori, depends on its functional treatment by a community. When Quine doubts in "Two Dogmas of Empiricism" (1951) whether any analytic proposition can be once and forever identified, he only confirms by a separate route Lewis's own preference for understanding propositions within community contexts. Nevertheless, Lewis was among the first to fully realize that the tremendous impact of Quine's attack on the analytic/synthetic (and the extensionalist logic which Lewis had been combating for decades) was devastating for his own epistemological project.

Lewis long supposed that the combination of his idealized approach to knowledge, his rejection of transcendental realism, and his antipathy towards materialism consequently forbid any entanglement with naturalism. In the hands of most self-proclaimed "naturalists" up to that era, naturalism stood for elevating science to the position of dictating all of reality, and was little more than an alternative term for materialism. Like the physicalism of more contemporary philosophy, naturalism demanded that an allegedly real entity be either reducible in principle to some entity knowable by science, or eliminated as delusion and error. The objects of religious faith, the ideals of the moral life, the values that motivate conduct, and the experiences of the mind, only mentioning prominent targets of naturalism, must be redescribable as

something within nature or be banished. Lewis was never a naturalist in this sense. He did attempt to show, much in the manner of Dewey, that values are neither purely subjective nor independently objective (Murphey, pp. 290–312). It is necessary to first analyze the role that value judgments play in our intellectual lives. Because value judgments are predictions about the experienced consequences of our deliberate interactions with the world and others, they are of a kind with all empirical judgments, and hence their objectivity resides in their capability for being tested: value judgments can be warranted or falsified. There is another sense in which value judgments are "subjective" where different people are interested in pursuing different kinds of experiences, but this is quite distinct sense of "subjective" at issue and cannot affect their empirical status. As he began to realize that values can be treated like other empirical judgments, Lewis came to describe his position as naturalistic, to distinguish his view from the emotivism approach to values and ethics which had abandoned hope for any empirical treatment of value judgments.

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Section One

Writings by George Santayana

HOW THOUGHT IS PRACTICAL

George Santayana. "How Thought is Practical." *The Life of Reason*, vol. 1: *Reason in Common Sense* (New York: Charles Scribner's Sons, 1905), chap. 9, pp. 205–235.

Nothing is more natural or more congruous with all the analogies of experience than that animals should feel and think. The relation of mind to body, of reason to nature, seems to be actually this: when bodies have reached a certain complexity and vital equilibrium, a sense begins to inhabit them which is focussed upon the preservation of that body and on its reproduction. This sense, as it becomes reflective and expressive of physical welfare, points more and more to its own persistence and harmony, and generates the Life of Reason. Nature is reason's basis and theme; reason is nature's consciousness; and, from the point of view of that consciousness when it has arisen, reason is also nature's justification and goal.

To separate things so closely bound together as are mind and body, reason and nature, is consequently a violent and artificial divorce, and a man of judgment will instinctively discredit any philosophy in which it is decreed. But to avoid divorce it is well first to avoid unnatural unions, and not to attribute to our two elements, which must be partners for life, relations repugnant to their respective natures and offices. Now the body is an instrument, the mind its function, the witness and reward of its operation. Mind is the body's entelechy, a value which accrues to the body when it has reached a certain perfection, of which it would be a pity, so to speak, that it should remain unconscious; so that while the body feeds the mind the mind perfects the body, lifting it and all its natural relations and impulses into the moral world, into the sphere of interests and ideas.

No connection could be closer than this reciprocal involution, as nature and life reveal it; but the connection is natural, not dialectical. The union will be denaturalised and, so far as philosophy goes, actually destroyed, if we seek to carry it on into logical equivalence. If we isolate the terms mind and body and study the inward implications of each apart, we shall never discover the other. That matter cannot, by transposition of its particles, *become* what we call consciousness, is an admitted truth; that mind cannot *become* its own occasions or determine its own march, though it be a truth not recognised by all philosophers, is in itself no less obvious. Matter, dialectically studied, makes consciousness seem a superfluous and unaccountable addendum;

mind, studied in the same way, makes nature an embarrassing idea, a figment which ought to be subservient to conscious aims and perfectly transparent, but which remains opaque and overwhelming. In order to escape these sophistications, it suffices to revert to immediate observation and state the question in its proper terms: nature lives, and perception is a private echo and response to ambient motions. The soul is the voice of the body's interests; in watching them a man defines the world that sustains him and that conditions all his satisfactions. In discerning his origin he christens Nature by the eloquent name of mother, under which title she enters the universe of discourse. Simultaneously he discerns his own existence and marks off the inner region of his dreams. And it behooves him not to obliterate these discoveries. By trying to give his mind false points of attachment in nature he would disfigure not only nature but also that reason which is so much the essence of his life.

Consciousness, then, is the expression of bodily life and the seat of all its values. Its place in the natural world is like that of its own ideal products, art, religion, or science; it translates natural relations into synthetic and ideal symbols by which things are interpreted with reference to the interests of consciousness itself. This representation is also an existence and has its place along with all other existences in the bosom of nature. In this sense its connection with its organs, and with all that affects the body or that the body affects, is a natural connection. If the word cause did not suggest dialectical bonds we might innocently say that thought was a link in the chain of natural causes. It is at least a link in the chain of natural events; for it has determinate antecedents in the brain and senses and determinate consequents in actions and words. But this dependence and this efficacy have nothing logical about them; they are habitual collocations in the world, like lightning and thunder. A more minute inspection of psycho-physical processes, were it practicable, would doubtless disclose undreamed of complexities and harmonies in them; the mathematical and dynamic relations of stimulus and sensation might perhaps be formulated with precision. But the terms used in the equation, their quality and inward habit, would always remain data which the naturalist would have to assume after having learned them by inspection. Movement could never be deduced dialectically or graphically from thought nor thought from movement. Indeed no natural relation is in a different case. Neither gravity, nor chemical reaction, nor life and reproduction, nor time, space, and motion themselves are logically deducible, nor intelligible in terms of their limits. The phenomena have to be accepted at their face value and allowed to retain a certain empirical complexity; otherwise the seed of all science is sterilised and calculation cannot proceed for want of discernible and pregnant elements.

How fine nature's habits may be, where repetition begins, and down to what depth a mathematical treatment can penetrate, is a question for the

natural sciences to solve. Whether consciousness, for instance, accompanies vegetative life, or even all motion, is a point to be decided solely by empirical analogy. When the exact physical conditions of thought are discovered in man, we may infer how far thought is diffused through the universe, for it will be coextensive with the conditions it will have been shown to have. Now, in a very rough way, we know already what these conditions are. They are first the existence of an organic body and then its possession of adaptable instincts, of instincts that can be modified by experience. This capacity is what an observer calls intelligence; docility is the observable half of reason. When an animal winces at a blow and readjusts his pose, we say he feels; and we say he thinks when we see him brooding over his impressions, and find him launching into a new course of action after a silent decoction of his potential impulses. Conversely, when observation covers both the mental and the physical process, that is, in our own experience, we find that felt impulses, the conceived objects for which they make, and the values they determine are all correlated with animal instincts and external impressions. A desire is the inward sign of a physical proclivity to act, an image in sense is the sign in most cases of some material object in the environment and always, we may presume, of some cerebral change. The brain seems to simmer like a caldron in which all sorts of matters are perpetually transforming themselves into all sorts of shapes. When this cerebral reorganisation is pertinent to the external situation and renders the man, when he resumes action, more a master of his world, the accompanying thought is said to be practical; for it brings a consciousness of power and an earnest of success.

Cerebral processes are of course largely hypothetical. Theory suggests their existence, and experience can verify that theory only in an indirect and imperfect manner. The addition of a physical substratum to all thinking is only a scientific expedient, a hypothesis expressing the faith that nature is mechanically intelligible even beyond the reaches of minute verification. The accompanying consciousness, on the other hand, is something intimately felt by each man in his own person; it is a portion of crude and immediate experience. That it accompanies changes in his body and in the world is not an inference for him but a datum. But when crude experience is somewhat refined and the soul, at first mingled with every image, finds that it inhabits only her private body, to whose fortunes hers are altogether wedded, we begin to imagine that we know the cosmos at large better than the spirit; for beyond the narrow limits of our own person only the material phase of things is open to our observation. To add a mental phase to every part and motion of the cosmos is then seen to be an audacious fancy. It violates all empirical analogy, for the phenomenon which feeling accompanies in crude experience is not mere material existence, but reactive organisation and docility.

The limits set to observation, however, render the mental and material spheres far from coincident, and even in a rough way mutually supple-

mentary, so that human reflection has fallen into a habit of interlarding them. The world, instead of being a living body, a natural system with moral functions, has seemed to be a bisectible hybrid, half material and half mental, the clumsy conjunction of an automaton with a ghost. These phases, taken in their abstraction, as they first forced themselves on human attention, have been taken for independent and separable facts. Experience, remaining in both provinces quite sensuous and superficial, has accordingly been allowed to link this purely mental event with that purely mechanical one. The linkage is practically not deceptive, because mental transformations are indeed signs of changes in bodies; and so long as a cause is defined merely as a sign, mental and physical changes may truly be said to cause one another. But so soon as this form of augury tries to overcome its crude empiricism and to establish phenomenal laws, the mental factor has to fall out of the efficient process and be represented there by what, upon accurate examination, it is seen to be really the sign of – I mean by some physiological event.

If philosophers of the Cartesian school had taken to heart, as the German transcendentalists did, the *cogito ergo sum* of their master, and had considered that a physical world is, for knowledge, nothing but an instrument to explain sensations and their order, they might have expected this collapse of half their metaphysics at the approach of their positive science: for if mental existence was to be kept standing only by its supposed causal efficacy nothing could prevent the whole world from becoming presently a *bête-machine*. Psychic events have no links save through their organs and their objects; the function of the material world is, indeed, precisely to supply their linkage. The internal relations of ideas, on the other hand, are dialectical; their realm is eternal and absolutely irrelevant to the march of events. If we must speak, therefore, of causal relations between mind and body, we should say that matter is the pervasive cause of mind's distribution, and mind the pervasive cause of matter's discovery and value. To ask for an efficient cause, to trace back a force or investigate origins, is to have already turned one's face in the direction of matter and mechanical laws: no success in that undertaking can fail to be a triumph for materialism. To ask for a justification, on the other hand, is to turn no less resolutely in the direction of ideal results and actualities from which instrumentality and further use have been eliminated. Spirit is useless, being the end of things: but it is not vain, since it alone rescues all else from vanity. It is called practical when it is prophetic of its own better fulfilments, which is the case whenever forces are being turned to good uses, whenever an organism is exploring its relations and putting forth new tentacles with which to grasp the world.

We saw in the beginning that the exigences of bodily life gave consciousness its first articulation. A bodily feat, like nutrition or reproduction, is celebrated by a festival in the mind, and consciousness is a sort of ritual solemnising by prayer, jubilation, or mourning, the chief episodes in the body's fortunes. The

organs, by their structure, select the impressions possible to them from the divers influences abroad in the world, all of which, if animal organisms had learned to feed upon them, might plausibly have offered a basis for sensation. Every instinct or habitual impulse further selects from the passing bodily affections those that are pertinent to its own operation and which consequently adhere to it and modify its reactive machinery. Prevalent and notable sensations are therefore signs, presumably marking the presence of objects important for the body's welfare or for the execution of its predestined offices. So that not only are the soul's aims transcripts of the body's tendencies, but all ideas are grafted upon the interplay of these tendencies with environing forces. Early images hover about primary wants as highest conceptions do about ultimate achievements.

Thought is essentially practical in the sense that but for thought no motion would be an action, no change a progress; but thought is in no way instrumental or servile; it is an experience realised, not a force to be used. That same spontaneity in nature which has suggested a good must be trusted to fulfil it. If we look fairly at the actual resources of our minds we perceive that we are as little informed concerning the means and processes of action as concerning the reason why our motives move us. To execute the simplest intention we must rely on fate: our own acts are mysteries to us. Do I know how I open my eyes or how I walk down stairs? Is it the supervising wisdom of consciousness that guides me in these acts? Is it the mind that controls the bewildered body and points out the way to physical habits uncertain of their affinities? Or is it not much rather automatic inward machinery that executes the marvellous work, while the mind catches here and there some glimpse of the operation, now with delight and adhesion, now with impotent rebellion? When impulses work themselves out unimpeded we say we act; when they are thwarted we say we are acted upon; but in neither case do we in the least understand the natural history of what is occurring. The mind at best vaguely forecasts the result of action: a schematic verbal sense of the end to be accomplished possibly hovers in consciousness while the act is being performed; but this premonition is itself the sense of a process already present and betrays the tendency at work; it can obviously give no aid or direction to the unknown mechanical process that produced it and that must realise its own prophecy, if that prophecy is to be realised at all.

That such an unknown mechanism exists, and is adequate to explain every so-called decision, is indeed a hypothesis far outrunning detailed verification, although conceived by legitimate analogy with whatever is known about natural processes; but that the mind is not the source of itself or its own transformations is a matter of present experience; for the world is an unaccountable datum, in its existence, in its laws, and in its incidents. The highest hopes of science and morality look only to discovering those laws and bringing one set of incidents – facts of perception – into harmony with another set – facts of

preference. This hoped-for issue, if it comes, must come about in the mind; but the mind cannot be its cause since, by hypothesis, it does not possess the ideas it seeks nor has power to realise the harmonies it desiderates. These have to be waited for and begged of destiny; human will, not controlling its basis, cannot possibly control its effects. Its existence and its efforts have at best the value of a good omen. They show in what direction natural forces are moving in so far as they are embodied in given men.

Men, like all things else in the world, are products and vehicles of natural energy, and their operation counts. But their conscious will, in its moral assertiveness, is merely a sign of that energy and of that will's eventual fortunes. Dramatic terror and dramatic humour both depend on contrasting the natural pregnancy of a passion with its conscious intent. Everything in human life is ominous, even the voluntary acts. We cannot, by taking thought, add a cubit to our stature, but we may build up a world without meaning it. Man is as full of potentiality as he is of impotence. A will that represents many active forces, and is skilful in divination and augury, may long boast to be almighty without being contradicted by the event.

That thought is not self-directive appears best in the most immaterial processes. In strife against external forces men, being ignorant of their deeper selves, attribute the obvious effects of their action to their chance ideas; but when the process is wholly internal the real factors are more evenly represented in consciousness and the magical, involuntary nature of life is better perceived. My hand, guided by I know not what machinery, is at this moment adding syllable to syllable upon this paper, to the general fulfilment, perhaps, of my felt intent, yet giving that intent an articulation wholly unforeseen, and often disappointing. The thoughts to be expressed simmer half-consciously in my brain. I feel their burden and tendency without seeing their form, until the mechanical train of impulsive association, started by the perusal of what precedes or by the accidental emergence of some new idea, lights the fuse and precipitates the phrases. If this happens in the most reflective and deliberate of activities, like this of composition, how much more does it happen in positive action. "The die is cast," said Caesar, feeling a decision in himself of which he could neither count nor weigh the multitudinous causes; and so says every strong and clear intellect, every well-formed character, seizing at the same moment with comprehensive instinct both its purposes and the means by which they shall be attained. Only the fool, whose will signifies nothing, boasts to have created it himself.

We must not seek the function of thought, then, in any supposed power to discover either ends not suggested by natural impulse or means to the accomplishment of those irrational ends. Attention is utterly powerless to change or create its objects in either respect; it rather registers without surprise – for it expects nothing in particular – and watches eagerly the images bubbling up in the living mind and the processes evolving there. These processes are

themselves full of potency and promise; will and reflection are no more inconsequential than any other processes bound by natural links to the rest of the world. Even if an atomic mechanism suffices to mark the concatenation of everything in nature, including the mind, it cannot rob what it abstracts from of its natural weight and reality: a thread that may suffice to hold the pearls together is not the whole cause of the necklace. But this pregnancy and implication of thought in relation to its natural environment is purely empirical. Since natural connection is merely a principle of arrangement by which the contiguities of things may be described and inferred, there is no difficulty in admitting consciousness and all its works into the web and woof of nature. Each psychic episode would be heralded by its material antecedents; its transformations would be subject to mechanical laws, which would also preside over the further transition from thought into its material expression.

This inclusion of mind in nature, however, is as far as possible from constituting the mind's function and value, or its efficacy in a moral and rational sense. To have prepared changes in matter would give no rationality to mind unless those changes in turn paved the way to some better mental existence. The worth of natural efficacy is therefore always derivative; the utility of mind would be no more precious than the utility of matter; both borrow all their worth from the part they may play empirically in introducing those moral values which are intrinsic and self-sufficing. In so far as thought is instrumental it is not worth having, any more than matter, except for its promise; it must terminate in something truly profitable and ultimate which, being good in itself, may lend value to all that led up to it. But this ultimate good is itself consciousness, thought, rational activity; so that what instrumental mentality may have preceded might be abolished without loss, if matter suffices to sustain reason in being; or if that instrumental mentality is worth retaining, it is so only because it already contains some premonition and image of its own fulfilment. In a word, the value of thought is ideal. The material efficacy which may be attributed to it is the proper efficacy of matter – an efficacy which matter would doubtless claim if we knew enough of its secret mechanism. And when that imputed and incongruous utility was subtracted from ideas they would appear in their proper form of expressions, realisations, ultimate fruits.

The incongruity of making thought, in its moral and logical essence, an instrument in the natural world will appear from a different point of view if we shift the discussion for a moment to a transcendental level. Since the material world is an object for thought, and potential in relation to immediate experience, it can hardly lie in the same plane of reality with the thought to which it appears. The spectator on this side of the foot-lights, while surely regarded by the play as a whole, cannot expect to figure in its mechanism or to see himself strutting among the actors on the boards. He listens and is served, being at once impotent and supreme. It has been well said that

> Only the free divine the laws,
> The causeless only know the cause.

Conversely, what in such a transcendental sense is causeless and free will evidently not be causal or determinant, being something altogether universal and notional, without inherent determinations or specific affinities. The objects figuring in consciousness will have implications and will require causes; not so the consciousness itself. The Ego to which all things appear equally, whatever their form or history, is the ground of nothing incidental: no specific characters or order found in the world can be attributed to its efficacy. The march of experience is not determined by the mere fact that experience exists. Another experience, differently logical, might be equally real. Consciousness is not itself dynamic, for it has no body, no idiosyncrasy or particular locus, to be the point of origin for definite relationships. It is merely an abstract name for the actuality of its random objects. All force, implication, or direction inhere in the constitution of specific objects and live in their interplay. Logic is revealed to thought no less than nature is, and even what we call invention or fancy is generated not by thought itself but by the chance fertility of nebulous objects, floating and breeding in the primeval chaos. Where the natural order lapses, if it ever does, not mind or will or reason can possibly intervene to fill the chasm – for these are parcels and expressions of the natural order – but only nothingness and pure chance.

Thought is thus an expression of natural relations, as will is of natural affinities; yet consciousness of an object's value, while it declares the blind disposition to pursue that object, constitutes its entire worth. Apart from the pains and satisfactions involved, an impulse and its execution would be alike destitute of importance. It would matter nothing how chaotic or how orderly the world became, or what animal bodies arose or perished there; any tendencies afoot in nature, whatever they might construct or dissolve, would involve no progress or disaster, since no preferences would exist to pronounce one eventual state of things better than another. These preferences are in themselves, if the dynamic order alone be considered, works of supererogation, expressing force but not producing it, like a statue of Hercules; but the principle of such preferences, the force they express and depend upon, is some mechanical impulse itself involved in the causal process. Expression gives value to power, and the strength of Hercules would have no virtue in it had it contributed nothing to art and civilisation. That conceived basis of all life which we call matter would be a mere potentiality, an inferred instrument deprived of its function, if it did not actually issue in life and consciousness. What gives the material world a legitimate status and perpetual pertinence in human discourse is the conscious life it supports and carries in its own direction, as a ship carries its passengers or rather as a passion carries its hopes. Conscious interests first justify and moralise the mechanisms they

express. Eventual satisfactions, while their form and possibility must be determined by animal tendencies, alone render these tendencies vehicles of the good. The direction in which benefit shall lie must be determined by irrational impulse, but the attainment of benefit consists in crowning that impulse with its ideal achievement. Nature dictates what men shall seek and prompts them to seek it; a possibility of happiness is thus generated and only its fulfilment would justify nature and man in their common venture.

Satisfaction is the touchstone of value; without reference to it all talk about good and evil, progress or decay, is merely confused verbiage, pure sophistry in which the juggler adroitly withdraws attention from what works the wonder – namely, that human and moral colouring to which the terms he plays with owe whatever efficacy they have. Metaphysicians sometimes so define the good as to make it a matter of no importance; not seldom they give that name to the sum of all evils. A good, absolute in the sense of being divorced from all natural demand and all possible satisfaction, would be as remote as possible from goodness: to call it good is mere disloyalty to morals, brought about by some fantastic or dialectical passion. In excellence there is an essential bias, an opposition to the possible opposite; this bias expresses a mechanical impulse, a situation that has stirred the senses and the will. Impulse makes value possible; and the value becomes actual when the impulse issues in processes that give it satisfaction and have a conscious worth. Character is the basis of happiness and happiness the sanction of character.[1]

That thought is nature's concomitant expression or entelechy, never one of her instruments, is a truth long ago divined by the more judicious thinkers, like Aristotle and Spinoza; but it has not met with general acceptance or even consideration. It is obstructed by superficial empiricism, which associates the better-known aspects of events directly together, without considering what mechanical bonds may secretly unite them; it is obstructed also by the traditional mythical idealism, intent as this philosophy is on proving nature to be the expression of something ulterior and non-natural and on hugging the fatal misconception that ideals and eventual goods are creative and miraculous forces, without perceiving that it thereby renders goods and ideals perfectly senseless; for how can anything be a good at all to which some existing nature is not already directed? It may therefore be worth while, before leaving this

[1] Aristippus asked Socrates "whether he knew anything good, so that if he answered by naming food or drink or money or health or strength or valour or anything of that sort, he might at once show that it was sometimes an evil. Socrates, however, knew very well that if anything troubles us what we demand is its cure, and he replied in the most pertinent fashion. 'Are you asking me,' he said, 'if I know anything good for a fever?' 'Oh, no,' said the other. 'Or for sore eyes?' 'Not that, either.' 'Or for hunger?' 'No, not for hunger.' 'Well, then,' said he, 'if you ask me whether I know a good that is good for nothing, I neither know it nor want to know it.'" – Xenophon, Memorabilia, iii., 8.

phase of the subject, to consider one or two prejudices which might make it sound paradoxical to say, as we propose, that ideals are ideal and nature natural.

Of all forms of consciousness the one apparently most useful is pain, which is also the one most immersed in matter and most opposite to ideality and excellence. Its utility lies in the warning it gives: in trying to escape pain we escape destruction. That we desire to escape pain is certain; its very definition can hardly go beyond the statement that pain is that element of feeling which we seek to abolish on account of its intrinsic quality. That this desire, however, should know how to initiate remedial action is a notion contrary to experience and in itself unthinkable. If pain could have cured us we should long ago have been saved. The bitterest quintessence of pain is its helplessness, and our incapacity to abolish it. The most intolerable torments are those we feel gaining upon us, intensifying and prolonging themselves indefinitely. This baffling quality, so conspicuous in extreme agony, is present in all pain and is perhaps its essence. If we sought to describe by a circumlocution what is of course a primary sensation, we might scarcely do better than to say that pain is consciousness at once intense and empty, fixing attention on what contains no character, and arrests all satisfactions without offering anything in exchange. The horror of pain lies in its intolerable intensity and its intolerable tedium. It can accordingly be cured either by sleep or by entertainment. In itself it has no resource; its violence is quite helpless and its vacancy offers no expedients by which it might be unknotted and relieved.

Pain is not only impotent in itself but is a sign of impotence in the sufferer. Its appearance, far from constituting its own remedy, is like all other organic phenomena subject to the law of inertia and tends only to its own continuance. A man's hatred of his own condition no more helps to improve it than hatred of other people tends to improve them. If we allowed ourselves to speak in such a case of efficacy at all, we should say that pain perpetuates and propagates itself in various ways, now by weakening the system, now by prompting convulsive efforts, now by spreading to other beings through the contagion of sympathy or vengeance. In fact, however, it merely betrays a maladjustment which has more or less natural stability. It may be instantaneous only; by its lack of equilibrium it may involve the immediate destruction of one of its factors. In that case we fabulously say that the pain has instinctively removed its own cause. Pain is here apparently useful because it expresses an incipient tension which the self-preserving forces in the organism are sufficient to remove. Pain's appearance is then the sign for its instant disappearance; not indeed by virtue of its inner nature or of any art it can initiate, but merely by virtue of mechanical associations between its cause and its remedy. The burned child dreads the fire and, reading only the surface of his life, fancies that the pain once felt and still remembered is the ground of his new prudence. Punishments, however, are not always efficacious, as everyone

knows who has tried to govern children or cities by the rod; suffering does not bring wisdom nor even memory, unless intelligence and docility are already there; that is, unless the friction which the pain betrayed sufficed to obliterate permanently one of the impulses in conflict. This readjustment, on which real improvement hangs and which alone makes "experience" useful, does not correspond to the intensity or repetition of the pains endured; it corresponds rather to such a plasticity in the organism that the painful conflict is no longer produced.

Threatened destruction would not involve pain unless that threatened destruction were being resisted; so that the reaction which pain is supposed to cause must already be taking place before pain can be felt. A will without direction cannot be thwarted; so that inhibition cannot be the primary source of any effort or of any ideal. Determinate impulses must exist already for their inhibition to have taken place or for the pain to arise which is the sign of that inhibition. The child's dread of the fire marks the acceleration of that impulse which, when he was burned, originally enabled him to withdraw his hand; and if he did not now shrink in anticipation he would not remember the pain nor know to what to attach his terror. Sight now suffices to awaken the reaction which touch at first was needed to produce; the will has extended its line of battle and thrown out its scouts farther afield; and pain has been driven back to the frontiers of the spirit. The conflicting reactions are now peripheral and feeble; the pain involved in aversion is nothing to that once involved in the burn. Had this aversion to fire been innate, as many aversions are, no pain would have been caused, because no profound maladjustment would have occurred. The surviving attraction, checked by fear, is a remnant of the old disorganisation in the brain which was the seat of conflicting reactions.

To say that this conflict is the guide to its own issue is to talk without thinking. The conflict is the sign of inadequate organisation, or of non-adaptation in the given organism to the various stimuli which irritate it. The reconstruction which follows this conflict, when it indeed follows, is of course a new and better adaptation; so that what involves the pain may often be a process of training which directs reaction into new and smoother channels. But the pain is present whether a permanent adaptation is being attained or not. It is present in progressive dissolution and in hopeless and exhausting struggles far more than in education or in profitable correction. Toothache and sea-sickness, birth-pangs and melancholia are not useful ills. The intenser the pain the more probable its uselessness. Only in vanishing is it a sign of progress; in occurring it is an omen of defeat, just as disease is an omen of death, although, for those diseased already, medicine and convalescence may be approaches to health again. Where a man's nature is out of gear and his instincts are inordinate, suffering may be a sign that a dangerous peace, in which impulse was carrying him ignorantly into paths without

issue, is giving place to a peace with security in which his reconstructed character may respond without friction to the world, and enable him to gather a clearer experience and enjoy a purer vitality. The utility of pain is thus apparent only, and due to empirical haste in collating events that have no regular nor inward relation; and even this imputed utility pain has only in proportion to the worthlessness of those who need it.

A second current prejudice which may deserve notice suggests that an organ, when its function is perfect, becomes unconscious, so that if adaptation were complete life would disappear. The well-learned routine of any mechanical art passes into habit, and habit into unconscious operation. The virtuoso is not aware how he manipulates his instrument; what was conscious labour in the beginning has become instinct and miracle in the end. Thus it might appear that to eliminate friction and difficulty would be to eliminate consciousness, and therefore value, from the world. Life would thus be involved in a contradiction and moral effort in an absurdity; for while the constant aim of practice is perfection and that of labour ease, and both are without meaning or standard unless directed to the attainment of these ends, yet such attainment, if it were actual, would be worthless, so that what alone justifies effort would lack justification and would in fact be incapable of existence. The good musician must strive to play perfectly, but, alas, we are told, if he succeeded he would have become an automaton. The good man must aspire to holiness, but, alas, if he reached holiness his moral life would have evaporated.

These melodramatic prophecies, however, need not alarm us. They are founded on nothing but rhetoric and small allegiance to any genuine good. When we attain perfection of function we lose consciousness of the medium, to become more clearly conscious of the result. The eye that does its duty gives no report of itself and has no sense of muscular tension or weariness; but it gives all the brighter and steadier image of the object seen. Consciousness is not lost when focussed, and the labour of vision is abolished in its fruition. So the musician, could he play so divinely as to be unconscious of his body, his instrument, and the very lapse of time, would be only the more absorbed in the harmony, more completely master of its unities and beauty. At such moments the body's long labour at last brings forth the soul. Life from its inception is simply some partial natural harmony raising its voice and bearing witness to its own existence; to perfect that harmony is to round out and intensify that life. This is the very secret of power, of joy, of intelligence. Not to have understood it is to have passed through life without understanding anything.

The analogy extends to morals, where also the means may be advantageously forgotten when the end has been secured. That leisure to which work is directed and that perfection in which virtue would be fulfilled are so far from being apathetic that they are states of pure activity, by containing

which other acts are rescued from utter passivity and unconsciousness. Impure feeling ranges between two extremes: absolute want and complete satisfaction. The former limit is reached in anguish, madness, or the agony of death, when the accidental flux of things in contradiction has reached its maximum or vanishing point, so that the contradiction and the flux themselves disappear by diremption. Such feeling denotes inward disorganisation and a hopeless conflict of reflex actions tending toward dissolution. The second limit is reached in contemplation, when anything is loved, understood, or enjoyed. Synthetic power is then at its height; the mind can survey its experience and correlate all the motions it suggests. Power in the mind is exactly proportionate to representative scope, and representative scope to rational activity. A steady vision of all things in their true order and worth results from perfection of function and is its index; it secures the greatest distinctness in thought together with the greatest decision, wisdom, and ease in action, as the lightning is brilliant and quick. It also secures, so far as human energies avail, its own perpetuity, since what is perfectly adjusted within and without lasts long and goes far.

To confuse means with ends and mistake disorder for vitality is not unnatural to minds that hear the hum of mighty workings but can imagine neither the cause nor the fruits of that portentous commotion. All functions, in such chaotic lives, seem instrumental functions. It is then supposed that what serves no further purpose can have no value, and that he who suffers no offuscation can have no feeling and no life. To attain an ideal seems to destroy its worth. Moral life, at that low level, is a fantastic game only, not having come in sight of humane and liberal interests. The barbarian's intensity is without seriousness and his passion without joy. His philosophy, which means to glorify all experience and to digest all vice, is in truth an expression of pathetic innocence. It betrays a rudimentary impulse to follow every beckoning hand, to assume that no adventure and no bewitchment can be anything but glorious. Such an attitude is intelligible in one who has never seen anything worth seeing nor loved anything worth loving. Immaturity could go no farther than to acknowledge no limits defining will and happiness. When such limits, however, are gradually discovered and an authoritative ideal is born of the marriage of human nature with experience, happiness becomes at once definite and attainable; for adjustment is possible to a world that has a fruitful and intelligible structure.

Such incoherences, which might well arise in ages without traditions, may be preserved and fostered by superstition. Perpetual servile employments and subjection to an irrational society may render people incapable even of conceiving a liberal life. They may come to think their happiness no longer separable from their misery and to fear the large emptiness, as they deem it, of a happy world. Like the prisoner of Chillon, after so long a captivity, they would regain their freedom with a sigh. The wholesome influences of nature,

however, would soon revive their wills, contorted by unnatural oppression, and a vision of perfection would arise within them upon breathing a purer air. Freedom and perfection are synonymous with life. The peace they bring is one

> whose names are also rapture, power,
> Clear sight, and love; for these are parts of peace.

Thought belongs to the sphere of ultimate results. What, indeed, could be more fitting than that consciousness, which is self-revealing and transcendentally primary, should be its own excuse for being and should contain its own total value, together with the total value of everything else? What could be more proper than that the whole worth of ideas should be ideal? To make an idea instrumental would be to prostitute what, being self-existent, should be self-justifying. That continual absoluteness which consciousness possesses, since in it alone all heaven and earth are at any moment revealed, ought to convince any radical and heart-searching philosopher that all values should be continually integrated and realised there, where all energies are being momently focussed. Thought is a fulfilment; its function is to lend utility to its causes and to make actual those conceived and subterranean processes which find in it their ultimate expression. Thought is nature represented; it is potential energy producing life and becoming an actual appearance.

The conditions of consciousness, however, are far from being its only theme. As consciousness bears a transcendent relation to the dynamic world (for it is actual and spiritual, while the dynamic is potential and material) so it may be exuberant and irresponsibly rich. Although its elements, in point of distribution and derivation, are grounded in matter, as music is in vibrations, yet in point of character the result may be infinitely redundant. The complete musician would devote but a small part of his attention to the basis of music, its mechanism, psychology, or history. Long before he had represented to his mind the causes of his art, he would have proceeded to practise and enjoy it. So sense and imagination, passion and reason, may enrich the soil that breeds them and cover it with a maze of flowers.

The theme of consciousness is accordingly far more than the material world which constitutes its basis, though this also is one of its themes; thought is no less at home in various expressions and embroideries with which the material world can be overlaid in imagination. The material world is conceived by digging beneath experience to find its cause; it is the efficacious structure and skeleton of things. This is the subject of scientific retrospect and calculation. The forces disclosed by physical studies are of course not directed to producing a mind that might merely describe them. A force is expressed in many other ways than by being defined; it may be felt, resisted, embodied, transformed, or symbolised. Forces work; they are not, like mathematical

concepts, exhausted in description. From that matter which might be describable in mechanical formulae there issue notwithstanding all manner of forms and harmonies, visible, audible, imaginable, and passionately prized. Every phase of the ideal world emanates from the natural and loudly proclaims its origin by the interest it takes in natural existences, of which it gives a rational interpretation. Sense, art, religion, society, express nature exuberantly and in symbols long before science is added to represent, by a different abstraction, the mechanism which nature contains.

HOW RELIGION MAY BE AN EMBODIMENT OF REASON

George Santayana. "How Religion May Be an Embodiment of Reason." *The Life of Reason*, vol. 3: *Reason in Religion* (New York: Charles Scribner's Sons, 1905), chap. 1, pp. 3–14.

Experience has repeatedly confirmed that well-known maxim of Bacon's, that "a little philosophy inclineth man's mind to atheism, but depth in philosophy bringeth men's minds about to religion." In every age the most comprehensive thinkers have found in the religion of their time and country something they could accept, interpreting and illustrating that religion so as to give it depth and universal application. Even the heretics and atheists, if they have had profundity, turn out after a while to be forerunners of some new orthodoxy. What they rebel against is a religion alien to their nature; they are atheists only by accident, and relatively to a convention which inwardly offends them, but they yearn mightily in their own souls after the religious acceptance of a world interpreted in their own fashion. So it appears in the end that their atheism and loud protestation were in fact the hastier part of their thought, since what emboldened them to deny the poor world's faith was that they were too impatient to understand it. Indeed, the enlightenment common to young wits and worm-eaten old satirists, who plume themselves on detecting the scientific ineptitude of religion – something which the blindest half see – is not nearly enlightened enough: it points to notorious facts incompatible with religious tenets literally taken, but it leaves unexplored the habits of thought from which those tenets sprang, their original meaning, and their true function. Such studies would bring the sceptic face to face with the mystery and pathos of mortal existence. They would make him understand why religion is so profoundly moving and in a sense so profoundly just. There must needs be something humane and necessary in an influence that has become the most general sanction of virtue, the chief occasion for; art and philosophy, and the source, perhaps, of the best human happiness. If nothing, as Hooker said, is "so malapert as a splenetic religion," a sour irreligion is almost as perverse.

At the same time, when Bacon penned the sage epigram we have quoted he forgot to add that the God to whom depth in philosophy brings back men's minds is far from being the same from whom a little philosophy estranges

them. It would be pitiful indeed if mature reflection bred no better conceptions than those which have drifted down the muddy stream of time, where tradition and passion have jumbled everything together. Traditional conceptions, when they are felicitous, may be adopted by the poet, but they must be purified by the moralist and disintegrated by the philosopher. Each religion, so dear to those whose life it sanctifies, and fulfilling so necessary a function in the society that has adopted it, necessarily contradicts every other religion, and probably contradicts itself. What religion a man shall have is a historical accident, quite as much as what language he shall speak. In the rare circumstances where a choice is possible, he may, with some difficulty, make an exchange; but even then he is only adopting a new convention which may be more agreeable to his personal temper but which is essentially as arbitrary as the old.

The attempt to speak without speaking any particular language is not more hopeless than the attempt to have a religion that shall be no religion in particular. A courier's or a dragoman's speech may indeed be often unusual and drawn from disparate sources, not without some mixture of personal originality; but that private jargon will have a meaning only because of its analogy to one or more conventional languages and its obvious derivation from them. So travellers from one religion to another, people who have lost their spiritual nationality, may often retain a neutral and confused residuum of belief, which they may egregiously regard as the essence of all religion, so little may they remember the graciousness and naturalness of that ancestral accent which a perfect religion should have. Yet a moment's probing of the conceptions surviving in such minds will show them to be nothing but vestiges of old beliefs, creases which thought, even if emptied of all dogmatic tenets, has not been able to smooth away at its first unfolding. Later generations, if they have any religion at all, will be found either to revert to ancient authority, or to attach themselves spontaneously to something wholly novel and immensely positive, to some faith promulgated by a fresh genius and passionately embraced by a converted people. Thus every living and healthy religion has a marked idiosyncrasy. Its power consists in its special and surprising message and in the bias which that revelation gives to life. The vistas it opens and the mysteries propounds are another world to live in; and another world to live in – whether we expect ever to pass wholly into it or no – is what we mean by having a religion.

What relation, then, does this great business of the soul, which we call religion, bear to the Life of Reason? That the relation between the two is close seems clear from several circumstances. The Life of Reason is the seat of all ultimate values. Now the history of mankind will show us that whenever spirits at once lofty and intense have seemed to attain the highest joys, they have envisaged and attained them in religion. Religion would therefore seem to be a vehicle or a factor in rational life, since the ends of rational life are

attained by it. Moreover, the Life of Reason is an ideal to which everything in the world should be subordinated; it establishes lines of moral cleavage everywhere and makes right eternally different from wrong. Religion does the same thing. It makes absolute moral decisions. It sanctions, unifies, and transforms ethics. Religion thus exercises a function of the Life of Reason. And a further function which is common to both is that of emancipating man from his personal limitations. In different ways religions promise to transfer the soul to better conditions. A supernaturally favoured kingdom is to be established for posterity upon earth, or for all the faithful in heaven, or the soul is to be freed by repeated purgations from all taint and sorrow, or it is to be lost in the absolute, or it is to become an influence and an object of adoration in the places it once haunted or wherever the activities it once loved may be carried on by future generations of its kindred. Now reason in its way lays before us all these possibilities: it points to common objects, political and intellectual, in which an individual may lose what is mortal and accidental in himself and immortalise what is rational and human; it teaches us how sweet and fortunate death may be to those whose spirit can still live in their country and in their ideas; it reveals the radiating effects of action and the eternal objects of thought.

Yet the difference in tone and language must strike us, so soon as it is philosophy that speaks. That change should remind us that even if the function of religion and that of reason coincide, this function is performed in the two cases by very different organs. Religions are many, reason one. Religion consists of conscious ideas, hopes, enthusiasms, and objects of worship; it operates by grace and flourished by prayer. Reason, on the other hand, is a mere principle or potential order, on which, indeed, we may come to reflect, but which exists in us ideally only, without variation or stress of any kind. We conform or do not conform to it; it does not urge or chide us, nor call for any emotions on our part other than those naturally aroused by the various objects which it unfolds in their true nature and proportion. Religion brings some order into life by weighting it with new materials. Reason adds to the natural materials only the perfect order which it introduces into them. Rationality is nothing but a form, an ideal constitution which experience may more or less embody. Religion is a part of experience itself, a mass of sentiments and ideas. The one is an inviolate principle, the other a changing and struggling force. And yet this struggling and changing force of religion, seems to direct man toward something eternal. It seems to make for an ultimate harmony within the soul and for an ultimate harmony between the soul and all the soul depends upon. So that religion, in its intent, is a more conscious and direct pursuit of the Life of Reason than is society, science, or art. For these approach and fill out the ideal life tentatively and piecemeal, hardly regarding the goal or caring for the ultimate justification of their instinctive aims. Religion also has an instinctive and blind side, and bubbles

up in all manner of chance practices and intuitions; soon, however, it feels its way toward the heart of things, and, from whatever quarter it may come, veers in the direction of the ultimate.

Nevertheless, we must confess that this religious pursuit of the Life of Reason has been singularly abortive. Those within the pale of each religion may prevail upon themselves to express satisfaction with its results, thanks to a fond partiality in reading the past and generous draughts of hope for the future; but any one regarding the various religions at once and comparing their achievements with what reason requires, must feel how terrible is the disappointment which they have one and all prepared for mankind. Their chief anxiety has been to offer imaginary remedies for mortal ills, some of which are incurable essentially, while others might have been really cured by well-directed effort. The Greek oracles, for instance, pretended to heal our natural ignorance, which has its appropriate though difficult cure, while the Christian vision of heaven pretended to be an antidote to our natural death, the inevitable correlate of birth and of a changing and conditioned existence. By methods of this sort little can be done for the real betterment of life. To confuse intelligence and dislocate sentiment by gratuitous fictions is a short-sighted way of pursuing happiness. Nature is soon avenged. An unhealthy exaltation and a one-sided morality have to be followed by regrettable reactions. When these come, the real rewards of life may seem vain to a relaxed vitality, and the very name of virtue may irritate young spirits untrained in any natural excellence. Thus religion too often debauches the morality it comes to sanction, and impedes the science it ought to fulfil.

What is the secret of this ineptitude? Why does religion, so near to rationality in its purpose, fall so far short of it in its texture and in its results? The answer is easy: Religion pursues rationality through the imagination. When it explains events or assigns causes, it gives imaginative substitute for science. When it gives precepts, insinuates ideals, or remoulds aspiration, it is an imaginative substitute for wisdom – I mean for the deliberate and impartial pursuit of all good. The conditions and the aims of life are both represented in religion poetically, but this poetry tends to arrogate to itself literal truth and moral authority, neither of which it possesses. Hence the depth and importance of religion become intelligible no less than its contradictions and practical disasters. Its object is the same as that of reason, but its method is to proceed by intuition and by unchecked poetical conceits. These are repeated and vulgarised in proportion to their original fineness and significance, till they pass for reports of objective truth and come to constitute a world of faith, superposed upon the world of experience and regarded as materially enveloping it, if not in space at least in time and in existence. The only truth of religion comes from its interpretation of life, from its symbolic rendering of that moral experience which it springs out of and which it seeks to elucidate. Its falsehood comes from the insidious misunderstanding which

clings to it, to the effect that these poetic conceptions are not merely representations of experience as it is or should be, but are rather information about experience or reality elsewhere – an experience and reality which, strangely enough, supply just the defects betrayed by reality and experience here.

Thus religion has the same original relation to life that poetry has; only poetry, which never pretends to literal validity, adds a pure value to existence, the value of a liberal imaginative exercise. The poetic value of religion would initially be greater than that of poetry itself, because religion deals with higher and more practical themes, with sides of life which are in greater need of some imaginative touch and ideal interpretation than are those pleasant or pompous things which ordinary poetry dwells upon. But this initial advantage is neutralised in part by the abuse to which religion is subject, whenever its symbolic rightness is taken for scientific truth. Like poetry, it improves the world only by imagining it improved, but not content with making this addition to the mind's furniture – an addition which might be useful and ennobling – it thinks to confer a more radical benefit by persuading mankind that, in spite of appearances, the world is really such as that rather arbitrary idealisation has painted it. This spurious satisfaction is naturally the prelude to many a disappointment, and the soul has infinite trouble to emerge again from the artificial problems and sentiments into which it is thus plunged. The value of religion becomes equivocal. Religion remains an imaginative achievement, a symbolic representation of moral reality which may have a most important function in vitalising the mind and in transmitting, by way of parables, the lessons of experience. But it becomes at the same time a continuous incidental deception; and this deception, in proportion as it is strenuously denied to be such, can work indefinite harm in the world and in the conscience.

On the whole, however, religion should not be conceived as having taken the place of anything better, but rather as having come to relieve situations which, but for its presence, would have been infinitely worse. In the thick of active life, or in the monotony of practical slavery, there is more need to stimulate fancy than to control it. Natural instinct is not much disturbed in the human brain by what may happen in that thin superstratum of ideas which commonly overlays it. We must not blame religion for preventing the development of a moral and natural science which at any rate would seldom have appeared; we must rather thank it for the sensibility, the reverence, the speculative insight which it has introduced into the world.

We may therefore proceed to analyse the significance and the function which religion has had at its different stages, and, without disguising or in the least condoning its confusion with literal truth, we may allow ourselves to enter as sympathetically as possible into its various conceptions and emotions. They have made up the inner life of many sages, and of all those who without great genius or learning have lived steadfastly in the spirit. The feeling of

reverence should itself be treated with reverence, although not at a sacrifice of truth, with which alone, in the end, reverence is compatible. Nor have we any reason to be intolerant of the partialities and contradictions which religions display. Were we dealing with a science, such contradictions would have to be instantly solved and removed; but when we are concerned with the poetic interpretation of experience, contradiction means only variety, and variety means spontaneity, wealth of resource, and a nearer approach to total adequacy.

If we hope to gain any understanding of these matters we must begin by taking them out of that heated and fanatical atmosphere in which the Hebrew tradition has enveloped them. The Jews had no philosophy, and when their national traditions came to be theoretically explicated and justified, they were made to issue in a puerile scholasticism and a rabid intolerance. The question of monotheism, for instance, was a terrible question to the Jews. Idolatry did not consist in worshipping a god who, not being ideal, might be unworthy of worship, but rather in recognising other gods than the one worshipped in Jerusalem. To the Greeks, on the contrary, whose philosophy was enlightened and ingenuous, monotheism and polytheism seemed perfectly innocent and compatible. To say God or the gods was only to use different expressions for the same influence, now viewed in its abstract unity and correlation with all existence, now viewed in its various manifestations in moral life, in nature, or in history. So that what in Plato, Aristotle, and the Stoics meets us at every step – the combination of monotheism with polytheism – is no contradiction, but merely an intelligent variation of phrase to indicate various aspects or functions in physical and moral things. When religion appears to us in this light its contradictions and controversies lose all their bitterness. Each doctrine will simply represent the moral plane on which they live who have devised or adopted it. Religions will thus be better or worse, never true or false. We shall be able to lend ourselves to each in turn, and seek to draw from it the secret of its inspiration.

PSYCHOLOGY

George Santayana. "Psychology." *The Life of Reason*, vol. 5: *Reason in Science* (New York: Charles Scribner's Sons, 1906), chap. 5, pp. 126–166.

If psychology is a science, many things that books of psychology contain should be excluded from it. One is social imagination. Nature, besides having a mechanical form and wearing a garment of sensible qualities, makes a certain inner music in the beholder's mind, inciting him to enter into other bodies and to fancy the new and profound life which he might lead there. Who, as he watched a cat basking in the sun, has not passed into that vigilant eye and felt all the leaps potential in that luxurious torpor? Who has not attributed some little romance to the passer-by? Who has not sometimes exchanged places even with things inanimate, and drawn some new moral experience from following the movement of stars or of daffodils? All this is idle musing or at best poetry; yet our ordinary knowledge of what goes on in men's minds is made of no other stuff. True, we have our own mind to go by, which presumably might be a fair sample of what men's minds are; but unfortunately our notion of ourselves is of all notions the most biassed and idealistic. If we attributed to other men only such obvious reasoning, sound judgment, just preferences, honest passions, and blameless errors as we discover in ourselves, we should take but an insipid and impractical view of mankind.

In fact, we do far better: for what we impute to our fellow-men is suggested by their conduct or by an instant imitation of their gesture and expression. These manifestations, striking us in all their novelty and alien habit, and affecting our interests in all manner of awkward ways, create a notion of our friends' natures which is extremely vivid and seldom extremely flattering.

Such romancing has the cogency proper to dramatic poetry; it is persuasive only over the third person, who has never had, but has always been about to have, the experience in question. Drawn from the potential in one's self, it describes at best the possible in others. The thoughts of men are incredibly evanescent, merely the foam of their labouring natures; and they doubtless vary much more than our trite classifications allow for. This is what makes passions and fashions, religions and philosophies, so hard to conceive when once the trick of them is a little antiquated. Languages are hardly more foreign to one another than are the thoughts uttered in them. We should give men credit for originality at least in their dreams, even if they have little of it

to show elsewhere; and as it was discovered but recently that all memories are not furnished with the like material images, but often have no material images whatever, so it may have to be acknowledged that the disparity in men's soliloquies is enormous, and that some races, perhaps, live content without soliloquising at all.

Nevertheless, in describing what happens, or in enforcing a given view of things, we constantly refer to universal experience as if everybody was agreed about what universal experience is and had personally gathered it all since the days of Adam. In fact, each man has only his own, the remnant saved from his personal acquisitions. On the basis of this his residual endowment, he has to conceive all nature, with whatever experiences may have fallen there to the lot of others. Universal experience is a comfortable fiction, a distinctly ideal construction, and no fund available for any one to draw from; which of course is not to deny that tradition and books, in transmitting materially the work of other generations, tend to assimilate us also to their mind. The result of their labours, in language, learning, and institutions, forms a hothouse in which to force our seedling fancy to a rational growth; but the influence is physical, the environment is material, and its ideal background or significance has to be inferred by us anew, according to our imaginative faculty and habits. Past experience, apart from its monuments, is fled for ever out of mortal reach. It is now a parcel of the motionless ether, of the ineffectual truth about what once was. To know it we must evoke it within ourselves, starting from its inadequate expressions still extant in the world. This reconstruction is highly speculative and, as Spinoza noted, better evidence of what we are than of what other men have been.

When we appeal to general experience, then, what we really have to deal with is our interlocutor's power of imagining that experience; for the real experience is dead and ascended into heaven, where it can neither answer nor hear. Our agreements or divergences in this region do not touch science; they concern only friendship and unanimity. All our proofs are, as they say in Spain, pure conversation; and as the purpose and best result can be only to kindle intelligence and propagate an ideal art, the method should be Socratic, genial, literary. In these matters, the alternative to imagination is not science but sophistry. We may perhaps entangle our friends in their own words, and force them for the moment to say what they do not mean, and what it is not in their natures to think; but the bent bow will spring back, perhaps somewhat sharply, and we shall get little thanks for our labour. There would be more profit in taking one another frankly by the hand and walking together along the outskirts of real knowledge, pointing to the material facts which we all can see, nature, the monuments, the texts, the actual ways and institutions of men; and in the presence of such a stimulus, with the contagion of a common interest, the plastic mind would respond of itself to the situation, and we should be helping one another to understand whatever lies within the range

of our fancy, be it in antiquity or in the human heart. That would be a true education; and while the result could not possibly be a science, not even a science of people's states of mind, it would be a deepening of humanity in ourselves and a wholesome knowledge of our ignorance.

In what is called psychology this loose, imaginative method is often pursued, although the field covered may be far narrower. Any generic experience of which a writer pretends to give an exact account must be reconstructed *ad hoc*; it is not the experience that necessitates the description, but the description that recalls the experience, defining it in a novel way. When La Rochefoucauld says, for instance, that there is something about our friend's troubles that secretly pleases us, many circumstances in our own lives, or in other people's, may suddenly recur to us to illustrate that *aperçu*; and we may be tempted to say, There is a truth. But is it a scientific truth? Or is it merely a bit of satire, a ray from a literary flashlight, giving a partial clearness for a moment to certain jumbled memories? If the next day we open a volume of Adam Smith, and read that man is naturally benevolent, that he cannot but enact and share the vicissitudes of his fellow-creatures, and that another man's imminent danger or visible torment will cause in him a distress little inferior to that felt by the unfortunate sufferer, we shall probably think this a truth also, and a more normal and a profounder truth than the other. But is it a law? Is it a scientific discovery that can lead us to definite inferences about what will happen or help us to decompose a single event, accurately and without ambiguity, into its component forces? Not only is such a thing impossible, but the Scotch philosopher's amiable generalities, perhaps largely applicable to himself and to his friends of the eighteenth century, may fail altogether to fit an earlier or a later age; and every new shade of brute born into the world will ground a new "theory of the moral sentiments."

The whole cogency of such psychology, therefore, lies in the ease with which the hearer, on listening to the analysis, recasts something in his own past after that fashion. These endless rival apperceptions regard facts that, until they are referred to their mechanical ground, show no continuity and no precision in their march. The apperception of them, consequently, must be doubly arbitrary and unstable, for there is no method in the subject-matter and there is less in the treatment of it. The views, however, are far from equal in value. Some may be more natural, eloquent, enlightening, than others; they may serve better the essential purpose of reflection, which is to pick out and bring forward continually out of the past what can have a value for the present. The spiritual life in which this value lies is practical in its associations, because it understands and dominates what touches action; yet it is contemplative in essence, since successful action consists in knowing what you are attempting and in attempting what you can find yourself achieving. Plan and performance will alike appeal to imagination and be appreciated through it; so that what trains imagination refines the very stuff that life is made of.

Science is instrumental in comparison, since the chief advantage that comes of knowing accurately is to be able, with safety, to imagine freely. But when it is science and accurate knowledge that we pursue, we should not be satisfied with literature.

When discourse on any subject would be persuasive, it appeals to the interlocutor to think in a certain dynamic fashion, inciting him, not without leading questions, to give shape to his own sentiments. Knowledge of the soul, insight into human nature and experience, are no doubt requisite in such an exercise; yet this insight is in these cases a vehicle only, an instinctive method, while the result aimed at is agreement on some further matter, conviction and enthusiasm, rather than psychological information. Thus if I declare that the storms of winter are not so unkind as benefits forgot, I say something which if true has a certain psychological value, for it could be inferred from that assertion that resentment is generally not proportionate to the injury received but rather to the surprise caused, so that it springs from our own foolishness more than from other people's bad conduct. Yet my observation was not made in the interest of any such inferences: it was made to express an emotion of my own, in hopes of kindling in others a similar emotion. It was a judgment which others were invited to share. There was as little exact science about it as if I had turned it into frank poetry and exclaimed, "Blow, blow, thou winter's wind!" Knowledge of human nature might be drawn even from that apostrophe, and a very fine shade of human feeling is surely expressed in it, as Shakespeare utters it; but to pray or to converse is not for that reason the same thing as to pursue science.

Now it constantly happens in philosophic writing that what is supposed to go on in the human mind is described and appealed to in order to support some observation or illustrate some argument – as continually, for instance, in the older English critics of human nature, or in these very pages. What is offered in such cases is merely an invitation to think after a certain fashion. A way of grasping or interpreting some fact is suggested, with a more or less civil challenge to the reader to resist the suasion of his own experience so evoked and represented. Such a method of appeal may be called psychological, in the sense that it relies for success on the total movement of the reader's life and mind, without forcing a detailed assent through ocular demonstration or pure dialectic; but the psychology of it is a method and a resource rather than a doctrine. The only doctrine aimed at in such philosophy is a general reasonableness, a habit of thinking straight from the elements of experience to its ultimate and stable deliverance. This is what in his way a poet or a novelist would do. Fiction swarms with such sketches of human nature and such renderings of the human mind as a critical philosopher depends upon for his construction. He need not be interested in the pathology of individuals nor even in the natural history of man; his effort is wholly directed toward improving the mind's economy and infusing reason into it as one might

religion, not without diligent self-examination and a public confession of sin. The human mind is nobody's mind in particular, and the science of it is necessarily imaginative. No one can pretend in philosophic discussion any more than in poetry that the experience described is more than typical. It is given out not for a literal fact, existing in particular moments or persons, but for an imaginative expression of what nature and life have impressed on the speaker. In so far as others live in the same world they may recognise the experience so expressed by him and adopt his interpretation; but the aptness of his descriptions and analyses will not constitute a science of mental states, but rather – what is a far greater thing – the art of stimulating and consolidating reflection in general.

There is a second constituent of current psychology which is indeed a science, but not a science of matters of fact – I mean the dialectic of ideas. The character of father, for example, implies a son, and this relation, involved in the ideas both of son and of father, implies further that a transmitted essence or human nature is shared by both. Every idea, if its logical texture is reflected upon, will open out into a curious world constituted by distinguishing the constituents of that idea more clearly and making explicit its implicit structure and relations. When an idea has practical intent and is a desire, its dialectic is even more remarkable. If I love a man I thereby love all those who share whatever makes me love him, and I thereby hate whatever tends to deprive him of this excellence. If it should happen, however, that those who resembled him most in amiability – say by flattering me no less than he did – were precisely his mortal enemies, the logic of my affections would become somewhat involved. I might end either by striving to reconcile the rivals or by discovering that what I loved was not the man at all, but only an office exercised by him in my regard which any one else might also exercise.

These inner lucubrations, however, while they lengthen the moment's vista and deepen present intent, give no indication whatever about the order or distribution of actual feelings. They are out of place in a psychology that means to be an account of what happens in the world. For these dialectical implications do not actually work themselves out. They have no historical or dynamic value. The man that by mistake or courtesy I call a father may really have no son, any more than Herodotus for being the father of history; or having had a son, he may have lost him; or the creature sprung from his loins may be a misshapen idiot, having nothing ideal in common with his parent. Similarly my affection for a friend, having causes much deeper than discourse, may cling to him through all transformations in his qualities and in his attitude toward me; and it may never pass to others for resembling him, nor take, in all its days, a Platonic direction. The impulse on which that dialectic was based may exhaust its physical energy, and all its implications may be nipped in the bud and be condemned for ever to the limbo of things unborn.

Spinoza's account of the passions is a beautiful example of dialectical psychology, beautiful because it shows so clearly the possibilities and impossibilities in such a method. Spinoza began with self-preservation, which was to be the principle of life and the root of all feelings. The violence done to physics appears in this beginning. Self-preservation, taken strictly, is a principle not illustrated in nature, where everything is in flux, and where habits destructive or dangerous to the body are as conspicuous as protective instincts. Physical mechanism requires reproduction, which implies death, and it admits suicide. Spinoza himself, far too noble a mind to be fixed solely on preserving its own existence, was compelled to give self-preservation an extravagant meaning in order to identify it with "intellectual love of God" or the happy contemplation of that natural law which destroyed all individuals. To find the self-preserving man you must take him after he has ceased to grow and before he has begun to love. Self-preservation, being thus no principle of natural history, the facts or estimations classed under that head need to be referred instead to one of two other principles – either to mechanical equilibrium and habit, or to dialectical consistency in judgment.

Self-preservation might express, perhaps, the values which conceived events acquire in respect to a given attitude of will, to an arrested momentary ideal. The actual state of any animal, his given instincts and tensions, are undoubtedly the point of origin from which all changes and relations are morally estimated; and if this attitude is afterward itself subjected to estimation, that occurs by virtue of its affinity or conflict with the living will of another moment. Valuation is dialectical, not descriptive, nor contemplative of a natural process. It might accordingly be developed by seeing what is implied in the self-preservation, or rather expression, of a will which by that dialectic would discover its ideal scope.

Such a principle, however, could never explain the lapse of that attitude itself. A natural process cannot be governed by the ideal relations which conceived things acquire by being represented in one of its moments. Spinoza, however, let himself wander into this path and made the semblance of an attempt, indeed not very deceptive, to trace the sequence of feelings by their mutual implication. The changes in life were to be explained by what the crystallised posture of life might be at a single instant. The arrow's flight was to be deduced from its instantaneous position. A passion's history was to be the history of what would have been its expression if it had had no history at all.

A man suffered by destiny to maintain for ever a single unchanged emotion might indeed think out its multifarious implications much in Spinoza's way. It is in that fashion that parties and sects, when somewhat stable, come to define their affinities and to know their friends and enemies all over the universe of discourse. Suppose, for instance, that I feel some titillation on reading a proposition concerning the contrast between Paul's idea of Peter and

Peter's idea of himself, a titillation which is accompanied by the idea of Spinoza, its external cause. Now he who loves an effect must proportionately love its cause, and titillation accompanied by the idea of its external cause is, Spinoza has proved, what men call love. I therefore find that I love Spinoza. Having got so far, I may consider further, referring to another demonstration in the book, that if some one gives Spinoza joy – Hobbes, for instance – my delight in Spinoza's increased perfection, consequent upon his joy and my love of him, accompanied by the idea of Hobbes, its external cause, constitutes love on my part for the redoubtable Hobbes as well. Thus the periphery of my affections may expand indefinitely, till it includes the infinite, the ultimate external cause of all my titillations. But how these interesting discoveries are interrupted before long by a desire for food, or by an indomitable sense that Hobbes and the infinite are things I do *not* love, is something that my dialectic cannot deduce; for it was the values radiating from a given impulse, the implications of its instant object, that were being explicated, not at all the natural forces that carry a man through that impulse and beyond it to the next phase of his dream, a phase which if it continues the former episode must continue it spontaneously, by grace of mechanical forces.

When dialectic is thus introduced into psychology, an intensive knowledge of the heart is given out for distributive knowledge of events. Such a study, when made by a man of genius, may furnish good spiritual reading, for it will reveal what our passions mean and what sentiments they would lead to if they could remain fixed and dictate all further action. This insight may make us aware of strange inconsistencies in our souls, and seeing how contrary some of our ideals are to others and how horrible, in some cases, would be their ultimate expression, we may be shocked into setting our house in order; and in trying to understand ourselves we may actually develop a self that can be understood. Meantime this inner discipline will not enlighten us about the march of affairs. It will not give us a key to evolution, either in ourselves or in others. Even while we refine our aspirations, the ground they sprang from will be eaten away beneath our feet. Instead of developing yesterday's passion, to-day may breed quite another in its place; and if, having grown old and set in our mental posture, we are incapable of assuming another, and are condemned to carrying on the dialectic of our early visions into a new-born world, to be a schoolmaster's measuring-rod for life's infinite exuberance, we shall find ourselves at once in a foreign country, speaking a language that nobody understands. No destiny is more melancholy than that of the dialectical prophet, who makes more rigid and tyrannous every day a message which every day grows less applicable and less significant.

That remaining portion of psychology which is a science, and a science of matters of fact, is physiological; it belongs to natural history and constitutes the biology of man. Soul, which was not originally distinguished from life, is there studied in its natural operation in the body and in the world. Psychology

then remains what it was in Aristotle's *De Anima* – an ill-developed branch of natural science, pieced out with literary terms and perhaps enriched by occasional dramatic interpretations. The specifically mental or psychic element consists in the feeling which accompanies bodily states and natural situations. This feeling is discovered and distributed at the same time that bodies and other material objects are defined; for when a man begins to decipher permanent and real things, and to understand that they are merely material, he thereby sets apart, in contrast with such external objects, those images and emotions which can no longer enter into the things' texture. The images and emotions remain, however, attached to those things, for they are refractions of them through bodily organs, or effects of their presence on the will, or passions fixed upon them as their object.

In parts of biology which do not deal with man observers do not hesitate to refer in the same way to the pain, the desire, the intention, which they may occasionally read in an animal's aspect. Darwin, for instance, constantly uses psychical language: his birds love one another's plumage and their aesthetic charms are factors in natural selection. Such little fables do not detract from the scientific value of Darwin's observations, because we see at once what the fables mean. The description keeps close enough to the facts observed for the reader to stop at the latter, rather than at the language in which they are stated. In the natural history of man such interpretation into mental terms, such microscopic romance, is even easier and more legitimate, because language allows people, perhaps before their feelings are long past, to describe them in terms which are understood to refer directly to mental experience. The sign's familiarity, to be sure, often hides in these cases a great vagueness and unseizableness in the facts; yet a beginning in defining distinctly the mental phase of natural situations has been made in those small autobiographies which introspective writers sometimes compose, or which are taken down in hospitals and laboratories from the lips of "subjects." What a man under special conditions may say he feels or thinks adds a constituent phase to his natural history; and were these reports exact and extended enough, it would become possible to enumerate the precise sensations and ideas which accompany every state of body and every social situation.

This advantage, however, is the source of that confusion and sophistry which distinguish the biology of man from the rest of physics. Attention is there arrested at the mental term, in forgetfulness of the situation which gave it warrant, and an invisible world, composed of these imagined experiences, begins to stalk behind nature and may even be thought to exist independently. This metaphysical dream may be said to have two stages: the systematic one, which is called idealism, and an incidental one which pervades ordinary psychology, in so far as mental facts are uprooted from their basis and deprived of their expressive or spiritual character, in order to be made elements in a dynamic scheme. This battle of feelings, whether with atoms or

exclusively with their own cohorts, might be called a primitive materialism, rather than an idealism, if idealism were to retain its Platonic sense; for forms and realisations are taken in this system for substantial elements, and are made to figure either as a part or as the whole of the world's matter.

Phenomena specifically mental certainly exist, since natural phenomena and ideal truths are concentrated and telescoped in apprehension, besides being weighted with an emotion due to their effect on the person who perceives them. This variation, which reality suffers in being reported to perception, turns the report into a mental fact distinguishable from its subject-matter. When the flux is partly understood and the natural world has become a constant presence, the whole flux itself, as it flowed originally, comes to be called a mental flux, because its elements and method are seen to differ from the elements and method embodied in material objects or in ideal truth. The primitive phenomena are now called mental because they all deviate from the realities to be ultimately conceived. To call the immediate mental is therefore correct and inevitable when once the ultimate is in view; but if the immediate were all, to call it mental would be unmeaning.

The visual image of a die, for instance, has at most three faces, none of them quite square; no hired artificer is needed to produce it; it cannot be found anywhere nor shaken in any box; it lasts only for an instant; thereafter it disappears without a trace – unless it flits back unaccountably through the memory – and it leaves no ponderable dust or ashes to attest that it had a substance. The opposite of all this is true of the die itself. But were no material die in existence, the image itself would be material; for, however evanescent, it would occupy space, have geometrical shape, colour, and magic dynamic destinies. Its transformations as it rolled on the idea of a table would be transformations in nature, however unaccountable by any steady law. Such material qualities a mental fact can retain only in the spiritual form of representation. A representation of matter is immaterial, but a material image, when no object exists, is a material fact. If the Absolute, to take an ultimate case, perceived nothing but space and atoms (perceiving itself, if you will, therein), space and atoms would be its whole nature, and it would constitute a perfect materialism. The fact that materialism was true would not of itself constitute an idealism worth distinguishing from its opposite. For a vehicle or locus exists only when it makes some difference to the thing it carries, presenting it in a manner not essential to its own nature.

The qualification of being by the mental medium may be carried to any length. As the subject-matter recedes the mental datum ceases to have much similarity or inward relevance to what is its cause or its meaning. The report may ultimately become, like pure pain or pleasure, almost wholly blind and irrelevant to any world; yet such emotion is none the less immersed in matter and dependent on natural changes both for its origin and for its function, since

a significant pleasure or pain makes comments on the world and involves ideals about what ought to be happening there.

Mental facts synchronise with their basis, for no thought hovers over a dead brain and there is no vision in a dark chamber; but their tenure of life is independent of that of their objects, since thought may be prophetic or reminiscent and is intermittent even when its object enjoys a continuous existence. Mental facts are similar to their objects, since things and images have, intrinsically regarded, the same constitution; but images do not move in the same plane with things and their parts are in no proportionate dynamic relation to the parts of the latter. Thought's place in nature is exiguous, however broad the landscape it represents; it touches the world tangentially only, in some ferment of the brain. It is probably no atom that supports the soul (as Leibnitz imagined), but rather some cloud of atoms shaping or remodelling an organism. Mind in this case would be, in its physical relation to matter, what it feels itself to be in its moral attitude toward the same; a witness to matter's interesting aspects and a realisation of its forms.

Mental facts, moreover, are highly selective; especially does this appear in respect to the dialectical world, which is in itself infinite, while the sum of human logic and mathematics, though too long for most men's patience, is decidedly brief. If we ask ourselves on what principle this selection and foreshortening of truth takes place in the mind, we may perhaps come upon the real bond and the deepest contrast between mind and its environment. The infinity of formal truth is disregarded in human thought when it is irrelevant to practice and to happiness; the infinity of nature is represented there in violent perspective, centring about the body and its interests. The seat and starting-point of every mental survey is a brief animal life. A mind seems, then, to be a consciousness of the body's interests, expressed in terms of what affects that body, as if in the Babel of nature a man heard only the voices that pronounced his name. A mind is a private view; it is gathered together in proportion as physical sensibility extends its range and makes one stretch of being after another tributary to the animal's life, and in proportion also as this sensibility is integrated, so that every organ in its reaction enlists the resources of every other organ as well. A personal will and intelligence thus arise; and they direct action from within with a force and freedom which are exactly proportionate to the material forces, within and without the body, which the soul has come to represent.

In other words, mind raises to an actual existence that *form* in material processes which, had the processes remained wholly material, would have had only ideal or imputed being – as the stars would not have been divided into the signs of the Zodiac but for the fanciful eye of astrologers. Automata might arise and be destroyed without any value coming or going; only a form-loving observer could say that anything fortunate or tragic had occurred, as poets might at the budding or withering of a flower. Some of nature's automata,

however, love themselves, and comment on the form they achieve or abandon; these constellations of atoms are genuine beasts. Their consciousness and their interest in their own individuality rescues that individuality from the realm of discourse and from having merely imputed limits.

That the basis of mind lies in the body's interests rather than in its atoms may seem a doctrine somewhat too poetical for psychology; yet may not poetry, superposed on material existence and supported by it, be perhaps the key to mind? Such a view hangs well together with the practical and prospective character of consciousness, with its total dependence on the body, its cognitive relevance to the world, and its formal disparity from material being. Mind does not accompany body like a useless and persistent shadow; it is significant and it is intermittent. Much less can it be a link in physiological processes, processes irrelevant to its intent and incompatible with its immaterial essence. Consciousness seems to arise when the body assumes an attitude which, being an attitude, supervenes upon the body's elements and cannot be contained within them. This attitude belongs to the whole body in its significant operation, and the report of this attitude, its expression, requires survey, synthesis, appreciation – things which constitute what we call mentality. This remains, of course, the mentality of that material situation; it is the voice of that particular body in that particular pass. The mind therefore represents its basis, but this basis (being a *form* of material existence and not matter itself) is neither vainly reduplicated by representation nor used up materially in the process.

Representation is far from idle, since it brings to focus those mechanical unities which otherwise would have existed only potentially and at the option of a roving eye. In evoking consciousness nature makes this delimination real and unambiguous; there are henceforth actual centres and actual interests in the mechanical flux. The flux continues to be mechanical, but the representation of it supervening has created values which, being due to imputation, could not exist without being imputed, while at the same time they could not have been imputed without being attached to one object or event rather than to another. Material dramas are thus made moral and raised to an existence of their own by being expressed in what we call the souls of animals and men; a mind is the entelechy of an organic body.[1] It is a region where form breeds an existence to express it, and destiny becomes important by being felt. Mind adds to being a new and needful witness so soon as the constitution of being gives foothold to apperception of its movement, and offers something in which it is possible to ground an interest.

[1] Aristotle called the soul the first entelechy of such a body. This first entelechy is what we should call life, since it is possessed by a man asleep. The French I know but do not use is in its first entelechy; the French I am actually speaking is in its second. Consciousness is therefore the second or actualised entelechy of its body.

That Aristotle has not been generally followed in views essentially so natural and pregnant as these is due no doubt to want of thoroughness in conceiving them, not only on the part of his readers but even on his own part; for he treated the soul, which should be on his own theory only an expression and an unmoved mover, as a power and an efficient cause. Analysis had not gone far enough in his day to make evident that all dynamic principles are mechanical and that mechanism can obtain only among objects; but by this time it should no longer seem doubtful that mental facts can have no connection except through their material basis and no mutual relevance except through their objects.

There is indeed a strange half-assumption afloat, a sort of reserved faith which every one seems to respect but nobody utters, to the effect that the mental world has a mechanism of its own, and that ideas intelligently produce and sustain one another. Systematic idealists, to be sure, have generally given a dialectical or moral texture to the cosmos, so that the passage from idea to idea in experience need not be due, in their physics, to any intrinsic or proportionate efficacy in these ideas themselves. The march of experience is not explained at all by such high cosmogonies. They abandon that practical calculation to some science of illusion that has to be tolerated in this provisional life. Their own understanding is of things merely in the gross, because they fall in with some divine plan and produce, unaccountably enough, some interesting harmony. Empirical idealists, on the contrary, in making a metaphysics out of psychology, hardly know what they do. The laws of experience which they refer to are all laws of physics. It is only the "possibilities" of sensation that stand and change according to law; the sensations themselves, if not referred to those permanent possibilities, would be a chaos worse than any dream.

Correct and scrupulous as empiricism may be when it turns its face backward and looks for the seat, the criterion, and the elements of knowledge, it is altogether incoherent and self-inhibited when it looks forward. It can believe in nothing but in what it conceives, if it would rise at all above a stupid immersion in the immediate; yet the relations which attach the moments of feeling together are material relations, implying the whole frame of nature. Psychology can accordingly conceive nothing but the natural world, with its diffuse animation, since this is the only background that the facts suggest or that, in practice, anybody can think of. If empiricism trusted the intellect, and consented to immerse flying experience in experience understood, it would become ordinary science and ordinary common sense. Deprecating this result, for no very obvious reason, it has to balance itself on the thin edge of an unwilling materialism, with a continual protestation that it does not believe in anything that it thinks. It is wholly entangled in the prevalent sophism that a man must renounce a belief when he discovers how he has formed it, and that our ancestors – at least the remoter ones – begin to exist when we discover them.

When Descartes, having composed a mechanical system of the world, was asked by admiring ladies to say something about the passions, what came into his mind was characteristically simple and dialectical. Life, he thought, was a perpetual conflict between reason and the emotions. The soul had its own natural principle to live by, but was diverted from that rational path by the waves of passion that beat against it and sometimes flooded it over. That was all his psychology. Ideal entities in dramatic relations, in a theatre which had to be borrowed, of course, from the other half of the world; because while a material mechanism might be conceived without minds in it, minds in action could not be conceived without a material mechanism – at least a represented one – lying beneath and between. Spinoza made a great improvement in the system by attaching the mind more systematically to the body, and studying the parts which organ and object played in qualifying knowledge; but his conception of mental unities and mental processes remained literary, or at best, as we have seen, dialectical. No shadow of a principle at once psychic and genetic appeared in his philosophy. All mind was still a transcript of material facts or a deepening of moral relations.

The idea of explaining the flow of ideas without reference to bodies appeared, however, in the principle of association. This is the nearest approach that has yet been made to a physics of disembodied mind – something which idealism sadly needs to develop. A terrible incapacity, however, appears at once in the principle of association; for even if we suppose that it could account for the flow of ideas, it does not pretend to supply any basis for sensations. And as the more efficient part of association – association by contiguity – is only a repetition in ideas of the order once present in impressions, the whole question about the march of mental experience goes back to what association does not touch, namely, the origin of sensations. What everybody assumed, of course, was that the order and quality of sensations were due to the body; but their derivation was not studied. Hume ignored it as much as possible, and Berkeley did not sacrifice a great deal when he frankly suggested that the production of sensation must be the direct work of God.

This tendency not to recognise the material conditions of mind showed itself more boldly in the treatment of ideation. We are not plainly aware (in spite of headaches, fatigue, sleep, love, intoxication, and madness) that the course of our thoughts is as directly dependent on the body as is their inception. It was therefore possible, without glaring paradox, to speak as if ideas caused one another. They followed, in recurring, the order they had first had in experience, as when we learn something by heart. Why, a previous verse being given, we should sometimes be unable to repeat the one that had often followed it before, there was no attempt to explain: it sufficed that reverie often seemed to retrace events in their temporal order. Even less dependent on material causes seemed to be the other sort of association, association by

similarity. This was a feat for the wit and the poet, to jump from China to Peru, by virtue of some spark of likeness that might flash out between them.

Much natural history has been written and studied with the idea of finding curious facts. The demand has not been for constant laws or intelligibility, but for any circumstance that could arrest attention or divert the fancy. In this spirit, doubtless, instances of association were gathered and classified. It was the young ladies' botany of mind. Under association could be gathered a thousand interesting anecdotes, a thousand choice patterns of thought. Talk of the wars, says Hobbes, once led a man to ask what was the value of a Roman penny. But why only once? The wars must have been often mentioned when the delivering up of King Charles did not enter any mind; and when it did, this would not have led any one to think of Judas and the thirty pence, unless he had been a good royalist and a good Christian – and then only by a curious accident. It was not these ideas, then, in their natural capacity that suggested one another; but some medium in which they worked, once in the world, opened those particular avenues between them. Nevertheless, no one cared to observe that each fact had had many others, never recalled, associated with it as closely as those which were remembered. Nor was the matter taken so seriously that one needed to ask how, among all similar things, similarity could decide which should be chosen; nor how among a thousand contiguous facts one rather than another should be recalled for contiguity's sake.

The best instance, perhaps, of regular association might be found in language and its meaning; for understanding implies that each word habitually calls up its former associates. Yet in what, psychologically considered, does understanding a word consist? What concomitants does the word "horse" involve in actual sentience? Hardly a clear image such as a man might paint; for the name is not confined to recalling one view of one animal obtained at one moment. Perhaps all that recurs is a vague sense of the environment, in nature and in discourse, in which that object lies. The word "kite" would immediately make a different region warm in the world through which the mind was groping. One would turn in idea to the sky rather than to the ground, and feel suggestions of a more buoyant sort of locomotion.

Understanding has to be described in terms of its potential outcome, since the incandescent process itself, as it exists in transit, will not suffer stable terms to define it. Potentiality is something which each half of reality reproaches the other with; things are potential to feeling because they are not life, and feelings are potential to science because they elude definition. To understand, therefore, is to know what to do and what to say in the sign's presence; and this practical knowledge is far deeper than any echo casually awakened in fancy at the same time. Instinctive recognition has those echoes for the most superficial part of its effect. Because I understand what "horse" means, the word can make me recall some episode in which a horse once figured. This

understanding is instinctive and practical and, if the phrase may be pardoned, it is the body that understands. It is the body, namely, that contains the habit and readiness on which understanding hangs; and the sense of understanding, the instant rejection of whatever clashes and makes nonsense in that context, is but a transcript of the body's education. Actual mind is all above board; it is all speculative, vibrant, the fruit and gift of those menial subterranean processes. Some generative processes may be called psychic in that they minister to mind and lend it what little continuity it can boast of; but they are not processes in consciousness. Processes in consciousness are aesthetic or dialectical processes, focussing a form rather than ushering in an existence. Mental activity has a character altogether alien to association: it is spiritual, not mechanical; an entelechy, not a genesis.

For these and other reasons association has fallen into some disrepute; but it is not easy to say what, in absolute psychology, has come to take its place. If we speak of suggestion, a certain dynamic turn seems to be given to the matter; yet in what sense a perception suggests its future development remains a mystery. That a certain ripening and expansion of consciousness goes on in man, not guided by former collocations of ideas, is very true; for we do not fall in love for the first time because this person loved and these ardent emotions have been habitually associated in past experience. And any impassioned discourse, opening at every turn into new vistas, shows the same sort of vegetation. Yet to observe that consciousness is automatic is not to disclose the mechanism by which it evolves. The theory of spontaneous growth offers less explanation of events, if that be possible, than the theory of association. It is perhaps a better description of the facts, since at least it makes no attempt to deduce them from one another.

If, on the contrary, a relation implied in the burden or will of the moment be invoked, the connection established, so far as it goes, is dialectical. Where a dialectical correspondence is not found, a material cause would have to be appealed to. Such a half-dialectical psychology would be like Schopenhauer's, quite metaphysical. It might be a great improvement on an absolute psychology, because it would restore, even if in mythical terms, a background and meaning to life. The unconscious Absolute Will, the avid Genius of the Species, the all-attracting Platonic Ideas are fabulous; but beneath them it is not hard to divine the forces of nature. This volitional school supplies a good stepping-stone from metaphysics back to scientific psychology. It remains merely to substitute instinct for will, and to explain that instinct – or even will, if the term be thought more consoling – is merely a word covering that operative organisation in the body which controls action, determines affinities, dictates preferences, and sustains ideation.

What scientific psychology has to attempt – for little has been accomplished – may be reduced to this: To develop physiology and anthropology until the mechanism of life becomes clear, at least in its general method, and

then to determine, by experiment and by well-sifted testimony, what conscious sublimation each of those material situations attains, if indeed it attains any. There will always remain, no doubt, many a region where the machinery of nature is too fine for us to trace or eludes us by involving agencies that we lack senses to perceive. In these regions where science is denied we shall have to be satisfied with landscape-painting. The more obvious results and superficial harmonies perceived in those regions will receive names and physics will be arrested at natural history. Where these unexplained facts are mental it will not be hard to do more systematically what common sense has done already, and to attach them, as we attach love or patriotism, to the natural crises that subtend them.

This placing of mental facts is made easy by the mental facts themselves, since the connection of mind with nature is double, and even when the derivation of a feeling is obscure we have but to study its meaning, allowing it to tell us what it is interested in, for a roundabout path to lead us safely back to its natural basis. It is superfluous to ask a third person what circumstances produce hunger: hunger will lead you unmistakably enough to its point of origin, and its extreme interest in food will not suffer you long to believe that want of nourishment has nothing to do with its cause. And it is not otherwise with higher emotions and ideas. Nothing but sophistry can put us in doubt about what conscience represents; for conscience does not say, square the circle, extinguish mankind so as to stop its sufferings, or steal so as to benefit your heirs. It says, Thou shalt not kill, and it also says, Thou shalt worship the Lord thy God who brought thee out of the land of Egypt. So that conscience, by its import and incidence, clearly enough declares what it springs from – a social tradition; and what it represents – the interests, real or imaginary, of the community in which you were reared.

Where psychology depends on literature, where both its units and its method are poetical, there can be no talk of science. We may as justly, or as absurdly, speak of the spirit of an age or of a religion as of a man's character or a river's god. Particulars in illustration may have good historic warrant, but the unities superimposed are ideal. Such metaphors may be very useful, for a man may ordinarily be trusted to continue his practices and a river its beneficent or disastrous floods; and since those rhetorical forms have no existence in nature we may continue to frame them as may be most convenient for discourse.

When psychology is a science, then, it describes the flying consciousness that accompanies bodily life. It is the science of feeling or absolute appearance, taken exactly as it seems or feels. Does such a psychology, we may be tempted to ask, constitute scientific knowledge of reality? Is it at last the true metaphysics? This question would have to be answered in the negative, yet not without some previous discriminations. There is honesty in the conviction that sentience is a sort of absolute; it is something which certainly exists. The

first Cartesian axiom applies to it, and to feel, even doubtfully, that feeling existed would be to posit its existence. The science that describes sentience describes at least a part of existence. Yet this self-grounding of consciousness is a suspicious circumstance: it renders it in one sense the typical reality and in another sense perhaps the sorriest illusion.

"Reality" is an ambiguous term. If we mean by it the immediate, then sentience would be a part if not the whole of reality; for what we mean by sentience or consciousness is the immediate in so far as we contain it, and whatever self-grounded existence there may be elsewhere can be conceived by us only mythically and on that analogy, as if it were an extension or variation of sentience. Psychology would then be knowledge of reality, for even when consciousness contains elaborate thoughts that might be full of illusions, psychology takes them only as so much feeling, and in that capacity they are real enough. At the same time, while our science terminates upon mere feeling, it can neither discover nor describe that feeling except in terms of something quite different; and the only part of psychology that perhaps penetrates to brute sentience is the part that is not scientific. The knowledge that science reaches about absolute states of mind is relative knowledge; these states of mind are approached from without and are defined by their surrounding conditions and by their ideal objects. They are known by being enveloped in processes of which they themselves are not aware. Apart from this setting, the only feeling known is that which is endured. After the fact, or before, or from any other point of vantage, it cannot be directly revealed; at best it may be divined and re-enacted. Even this possible repetition would not constitute knowledge unless the imaginative reproduction were identified with or attributed to some natural fact; so that an adventitious element would always attach to any recognised feeling, to any feeling reported to another mind. It could not be known at all unless something were known about it, so that it might not pass, as otherwise it would, for a mere ingredient of present sentience.

It is precisely by virtue of this adventitious element that the re-enacted feeling takes its place in nature and becomes an object of knowledge. Science furnishes this setting; the jewel – precious or false – must be supplied by imagination. Romance, dramatic myth, is the only instrument for knowing this sort of "reality." A flying moment, if at all *understood* or underpinned, or if seen in its context, would be not known absolutely as it had been felt, but would be known scientifically and as it lay in nature. But dramatic insight, striving to pierce through the machinery of the world and to attain and repeat what dreams may be going on at its core, is no science; and the very notion that the dreams are internal, that they make the interior or substance of bodies, is a crude materialistic fancy. Body, on the contrary, is the substance or instrument of mind, and has to be looked for beneath it. The mind is itself ethereal and plays about the body as music about a violin, or rather as the

sense of a page about the print and paper. To look for it *within* is not to understand what we are looking for.

Knowledge of the immediate elsewhere is accordingly visionary in its method, and furthermore, if, by a fortunate chance, it be true in fact, it is true only of what in itself is but appearance; for the immediate, while absolutely real in its stress or presence, is indefinitely ignorant and false in its deliverance. It knows itself, but in the worst sense of the word knowledge; for it knows nothing of what is true about it, nothing of its relations and conditions. To pierce to this blind "reality" or psychic flux, which is nothing but flying appearance, we must rely on fortune, or an accidental harmony between imitative fancy in us now and original sentience elsewhere. It is accordingly at least misleading to give the name of "reality" to this appearance, which is entirely lost and inconsequential in its being, without trace of its own status, and consequently approachable or knowable only by divination, as a dream might call to another dream.

It is preferable to give a more Platonic meaning to the word and to let "reality" designate not what is merely felt diffusely but what is true about those feelings. Then dramatic fancy, psychology of the sympathetic sort, would not be able to reach reality at all. On the other hand scientific psychology, together with all other sciences, would have reality for its object; for it would disclose what really was true about sentient moments, without stopping particularly to sink abstractedly into their inner quality or private semblance. It would approach and describe the immediate as a sentient factor in a natural situation, and show us to what extent that situation was represented in that feeling. This representation, by which the dignity and interest of pure sentience would be measured, might be either pictorial or virtual; that is, a conscious moment might represent the environing world either scientifically, by understanding its structure, or practically, by instinctive readiness to meet it.

What, for instance, is the reality of Napoleon? Is it what a telepathic poet, a complete Browning, might reconstruct? Is it Napoleon's life-long soliloquy? Or to get at the reality should we have to add, as scientific psychology would, the conditions under which he lived, and their relation to his casual feelings? Obviously if Napoleon's thoughts had had no reference to the world we should not be able to recover them; or if by chance such thoughts fell some day to our share, we should attribute them to our own mental luxuriance, without suspecting that they had ever visited another genius. Our knowledge of his life, even where it is imaginative, depends upon scientific knowledge for its projection; and his fame and immortality depend on the degree to which his thoughts, being rooted in the structure of the world and pertinent to it, can be rationally reproduced in others and attributed to him. Napoleon's consciousness might perhaps be more justly identified with the truth or reality of him than could that of most people, because he seems to have been

unusually cognisant of his environment and master of the forces at work in it and in himself. He understood his causes and function, and knew that he had *arisen*, like all the rest of history, and that he stood for the transmissible force and authority of greater things. Such a consciousness can be known in proportion as we, too, possess knowledge, and is worth the pains; something which could not be said of the absolute sentience of Dick or Harry, which has only material being, brute existence, without relevance to anything nor understanding of itself.

The circumstances, open to science, which surround consciousness are thus real attributes of a man by which he is truly known and distinguished. Appearances are the qualities of reality, else realities would be without place, time, character, or interrelation. In knowing that Napoleon was a Corsican, a short man with a fine countenance, we know appearances only; but these appearances are true of the reality. And if the presumable inner appearances, Napoleon's long soliloquy, were separated from the others, those inner appearances would not belong to Napoleon nor have any home in the knowable world. That which physics, with its concomitant psychology, might discover in a man is the sum of what is true about him, seeing that a man is a concretion in existence, the fragment of a world, and not a definition. Appearances define the constituent elements of his reality, which could not be better known than through their means.

THE VALIDITY OF SCIENCE

George Santayana. "The Validity of Science." *The Life of Reason*, vol. 5: *Reason in Science* (New York: Charles Scribner's Sons, 1906), chap. 11, pp. 301–320.

The same despair or confusion which, when it overtakes human purposes, seeks relief in arbitrary schemes of salvation, when it overtakes human knowledge, may breed arbitrary substitutes for science. There are post-rational systems of nature as well as of duty. Most of these are myths hardly worth separating from the post-rational moralities they adorn, and have been sufficiently noticed in the last chapter; but a few aspire to be critical revisions of science, themselves scientific. It may be well, in bringing this book to a close, to review these proposed revisions. The validity of science is at stake, and with it the validity of that whole Life of Reason which science crowns, and justifies to reflection.

There are many degrees and kinds of this critical retractation. Science may be accepted bodily, while its present results are modified by suggesting speculatively what its ultimate results might be. This is natural philosophy or legitimate metaphysics. Or science may be accepted in part, and in part subjected to control by some other alleged vehicle of knowledge. This is traditional or intuitive theology. Or science may be retracted and withdrawn altogether, on the ground that it is but methodological fiction, its facts appearances merely, and its principles tendencies to feign. This is transcendentalism; whereupon a dilemma presents itself. We may be invited to abstain from all hypostasis or hearty belief in anything, and to dwell only on the consciousness of imaginative activity in a vacuum – which is radical idealism. Or we may be assured that, science being a dream, we may awake from it into another cosmos, built upon principles quite alien to those illustrated in nature or applicable in practice – which is idealism of the mythical sort. Finally it may occur to us that the criticism of science is an integral part of science itself, and that a transcendental method of survey, which marshals all things in the order of their discovery, far from invalidating knowledge can only serve to separate it from incidental errors and to disclose the relative importance of truths. Science would then be rehabilitated by criticism. The primary movement of the intellect would not be condemned by that subsequent reflection which it makes possible, and which collates its results. Science, purged of all needless realism and seen in its relation to human life,

would continue to offer the only conception of reality which is pertinent or possible to the practical mind.

We may now proceed to discuss these various attitudes in turn.

A first and quite blameless way of criticising science is to point out that science is incomplete. That it grows fast is indeed its commonest boast; and no man of science is so pessimistic as to suppose that its growth is over. To wish to supplement science and to regard its conclusions as largely provisional is therefore more than legitimate. It is actually to share the spirit of inquiry and to feel the impulse toward investigation. When new truths come into view, old truths are thereby reinterpreted and put in a new light; so that the acquisitions of science not only admit of revision but loudly call for it, not wishing for any other authority or vindication than that which they might find in the context of universal truth.

To revise science in this spirit would be merely to extend it. No new method, no transverse philosophy, would be requisite or fitted for the task. Knowledge would be transformed by more similar knowledge, not by some verbal manipulation. Yet while waiting for experience to grow and accumulate its lessons, a man of genius, who had drunk deep of experience himself, might imagine some ultimate synthesis. He might venture to carry out the suggestions of science and anticipate the conclusions it would reach when completed. The game is certainly dangerous, especially if the prophecy is uttered with any air of authority; yet with good luck and a fine instinct, such speculation may actually open the way to discovery and may diffuse in advance that virtual knowledge of physics which is enough for moral and poetic purposes. Verification in detail is needed, not so much for its own sake as to check speculative errors; but when speculation is by chance well directed and hits upon the substantial truth, it does all that a completed science would do for mankind; since science, if ever completed, would immediately have to be summed up again and reduced to generalities. Under the circumstances of human life, ultimate truth must forego detailed verification and must remain speculative. The curse of modern philosophy is only that it has not drawn its inspiration from science; as the misfortune of science is that it has not yet saturated the mind of philosophers and recast the moral world. The Greek physicists, puerile as was their notion of natural mechanism, had a more integral view of things. They understood nature's uses and man's conditions in an honest and noble way. If no single phenomenon had been explained correctly by any philosopher from Thales to Lucretius, yet by their frank and studious contemplation of nature they would have liberated the human soul.

Unfortunately the supplements to science which most philosophers supply in our day are not conceived in a scientific spirit. Instead of anticipating the physics of the future they cling to the physics of the past. They do not stimulate us by a picture, however fanciful, of what the analogies of nature and politics actually point to; they seek rather to patch and dislocate current

physics with some ancient myth, once the best physics obtainable, from which they have not learned to extricate their affections.

Sometimes these survivals are intended to modify scientific conceptions but slightly, and merely to soften a little the outlines of a cosmic picture to which religion and literature are not yet accustomed. There is a school of political conservatives who, with no specific interest in metaphysics, cannot or dare not break with traditional modes of expression, with the customs of their nation, or with the clerical classes. They accordingly append to current knowledge certain sentimental postulates, alleging that what is established by tradition and what appeals to the heart must somehow correspond to something which is needful and true. But their conventional attachment to a religion which in its original essence was perhaps mystical and revolutionary, scarcely modifies, in their eyes, the sum of practical assurances or the aim of human life. As language exercises some functions which science can hardly assume (as, for instance, in poetry and communication) so theology and metaphysics, which to such men are nothing but languages, might provide for inarticulate interests, and unite us to much that lies in the dim penumbra of our workaday world. Ancient revelations and mysteries, however incredible if taken literally, might therefore be suffered to nourish undisturbed, so long as they did not clash with any clear fact or natural duty. They might continue to decorate with a mystical aureole the too prosaic kernel of known truth.

Mythology and ritual, with the sundry divinations of poets, might in fact be kept suspended with advantage over human passion and ignorance, to furnish them with decent expression. But once indulged, divination is apt to grow arrogant and dogmatic. When its oracles have become traditional they are almost inevitably mistaken for sober truths. Hence the second kind of supplement offered to science, so that revelations with which moral life has been intertwined may find a place beside or beyond science. The effort is honest, but extraordinarily short-sighted. Whatever value those revelations may have they draw from actual experience or inevitable ideals. When the ground of that experience and those ideals is disclosed by science, nothing of any value is lost; it only remains to accustom ourselves to a new vocabulary and to shift somewhat the associations of those values which life contains or pursues. Revelations are necessarily mythical and subrational; they express natural forces and human interests in a groping way, before the advent of science. To stick in them, when something more honest and explicit is available, is inconsistent with caring for attainable welfare or understanding the situation. It is to be stubborn and negligent under the cloak of religion. These prejudices are a drag on progress, moral no less than material; and the sensitive conservatism that fears they may be indispensable is entangled in a pathetic delusion. It is conservatism in a ship-wreck. It has not the insight to embrace the fertile principles of life, which are always ready to renew life after no matter what natural catastrophe. The good laggards have no courage to

strip for the race. Rather than live otherwise, and live better, they prefer to nurse the memories of youth and to die with a retrospective smile upon their countenance.

Far graver than the criticism which shows science to be incomplete is that which shows it to be relative. The fact is undeniable, though the inferences made from it are often rash and gratuitous. We have seen that science is nothing but developed perception, interpreted intent, common-sense rounded out and minutely articulated. It is therefore as much an instinctive product, as much a stepping forth of human courage in the dark, as is any inevitable dream or impulsive action. Like life itself, like any form of determinate existence, it is altogether autonomous and unjustifiable from the outside. It must lean on its own vitality; to sanction reason there is only reason, and to corroborate sense there is nothing but sense. Inferential thought is a venture not to be approved of, save by a thought no less venturesome and inferential. This is once for all the fate of a living being – it is the very essence of spirit – to be ever on the wing, borne by inner forces toward goals of its own imagining, confined to a passing apprehension of a represented world. Mind, which calls itself the organ of truth, is a permanent possibility of error. The encouragement and corroboration which science is alleged to receive from moment to moment may, for aught it knows, be simply a more ingenious self-deception, a form of that cumulative illusion by which madness can confirm itself, creating a whole world, with an endless series of martyrs, to bear witness to its sanity.

To insist on this situation may seem idle, since no positive doctrine can gain thereby in plausibility, and no particular line of action in reasonableness. Yet this transcendental exercise, this reversion to the immediate, may be recommended by way of a cathartic, to free the mind from ancient obstructions and make it hungrier and more agile in its rational faith. Scepticism is harmless when it is honest and universal; it clears the air and is a means of reorganising belief on its natural foundations. Belief is an inevitable accompaniment of practice and intent, both of which it will cling to all the more closely after a thorough criticism. When all beliefs are challenged together, the just and necessary ones have a chance to step forward and to re-establish themselves alone. The doubt cast on science, when it is an ingenuous and impartial doubt, will accordingly serve to show what sort of thing science is, and to establish it on a sure foundation. Science will then be seen to be tentative, genial, practical, and humane, full of ideality and pathos, like every great human undertaking.

Unfortunately a searching disintegration of dogma, a conscientious reversion to the immediate, is seldom practised for its own sake. So violent a disturbance of mental habits needs some great social upheaval or some revolutionary ambition to bring it about. The transcendental philosophy might never have been put forward at all, had its authors valued it for what

it can really accomplish. The effort would have seemed too great and the result too nugatory. Their criticism of knowledge was not freely undertaken, with the pure speculative motive of understanding and purifying human science. They were driven on by the malicious psychology of their predecessors, by the perplexities of a sophistical scepticism, and by the imminent collapse of traditional metaphysics. They were enticed at the same time by the hope of finding a new basis for the religious myths associated with that metaphysics. In consequence their transcendentalism was not a rehearsal of the Life of Reason, a retrospect criticising and justifying the phases of human progress. It was rather a post-rational system of theology, the dangerous cure to a harmless disease, inducing a panic to introduce a fable. The panic came from the assumption (a wholly gratuitous one) that a spontaneous constructive intellect cannot be a trustworthy instrument, that appearances cannot be the properties of reality, and that things cannot be what science finds that they are. We were forbidden to believe in anything we might discover or to trust in anything we could see. The artificial vacuum thus produced in the mind ached to be filled with something, and of course a flood of rhetorical commonplaces was at hand, which might rush in to fill it.

The most heroic transcendentalists were but men, and having imagined that logic obliged them to abstain from every sort of hypostasis, they could not long remain true to their logic. For a time, being of a buoyant disposition, they might feel that nothing could be more exhilarating than to swim in the void, altogether free from settled conditions, altogether the ignorant creators of each moment's vision. Such a career evidently affords all sorts of possibilities, except perhaps the possibility of being a career. But when a man has strained every nerve to maintain an absolute fluidity and a painful fidelity to the immediate, he can hardly be blamed if he lapses at last into some flattering myth, and if having satisfied himself that all science is fiction he proclaims some fairy-tale to be the truth. The episodes of experience, not being due to any conceivable machinery beneath, might come of mere willing, or at the waving of a dialectical wand. Yet apart from this ulterior inconsistency and backsliding into credulity, transcendentalism would hear nothing of causes or grounds. All phenomena existed for it on one flat level. We were released from all dogma and reinstated in the primordial assurance that we were all there was, but without understanding what we were, and without any means of controlling our destiny, though cheered by the magnificent feeling that that destiny was great.

It is intelligible that a pure transcendentalism of this sort should not be either stable or popular. It may be admired for its analytic depth and its persistency in tracing all supposed existences back to the experience that vouches for them. Yet a spirit that finds its only exercise in gloating on the consciousness that it is a spirit, one that has so little skill in expression that it feels all its embodiments to be betrayals and all its symbols to be misrepresentations, is

a spirit evidently impotent and confused. It is self-inhibited, and cannot fulfil its essential vocation by reaching an embodiment at once definitive and ideal, philosophical and true. We may excuse a school that has done one original task so thoroughly as transcendentalism has thing could be said of it, would be simply an integral term in the discourse that described it. And this discourse, this sad residuum of reality, would remain an absolute datum without a ground, without a subject-matter, without a past, and without a future.

It suffices, therefore, to take the supposed negative implication in transcendentalism a little seriously to see that it leaves nothing standing but negation and imbecility; so that we may safely conclude that such a negative implication is gratuitous, and also that in taking the transcendental method for an instrument of reconstruction its professors were radically false to it. They took the starting-point of experience, on which they had fallen back, for its ultimate deliverance, and in reverting to protoplasm they thought they were rising to God. The transcendental method is merely retrospective; its use is to recover more systematically conceptions already extant and inevitable. It invalidates nothing in science; much less does it carry with it any rival doctrine of its own. Every philosophy, even materialism, may find a transcendental justification, if experience as it develops will yield no other terms. What has reason to tremble at a demand for its credentials is surely not natural science; it is rather those mystical theologies or romantic philosophies of history which aspire to take its place. Such lucubrations, even if reputed certain, can scarcely be really credited or regarded in practice; while scientific tenets are necessarily respected, even when they are declared to be fictions. This nemesis is inevitable; for the mind must be inhabited, and the ideas with which science peoples it are simply its involuntary perceptions somewhat more clearly arranged.

That the relativity of science – its being an emanation of human life – is nothing against its truth appears best, perhaps, in the case of dialectic. Dialectic is valid by virtue of an intended meaning and felt congruity in its terms; but these terms, which intent fixes, are external and independent in their ideal nature, and the congruity between them is not created by being felt but, whether incidentally felt or not, is inherent in their essence. Mathematical thinking is the closest and most intimate of mental operations, nothing external being called in to aid; yet mathematical truth is as remote as possible from being personal or psychic. It is absolutely self-justified and is necessary before it is discovered to be so. Here, then, is a conspicuous region of truth, disclosed to the human intellect by its own internal exercise, which is nevertheless altogether independent, being eternal and indefeasible, while the thought that utters it is ephemeral.

The validity of material science, not being warranted by pure insight, cannot be so quickly made out; nevertheless it cannot be denied systematically,

and the misunderstood transcendentalism which belittles physics contradicts its own basis. For how are we supposed to know that what call facts are mere appearances and what we call objects mere creations of thought? We know this by physics. It is physiology, a part of physics, that assures us that our senses and brains are conditions of our experience. Were it not for what we know of the outer world and of our place in it, we should be incapable of attaching any meaning to subjectivity. The flux of things would then go on in their own medium, not in our minds; and no suspicion of illusion or of qualification by mind would attach to any event in nature. So it is in a dream; and it is our knowledge of physics, our reliance on the world's material coherence, that marks our awakening, and that constitutes our discovery that we exist as minds and are subject to dreaming. It is quite true that the flux, as it exists in men, is largely psychic; but only because the events it contains are effects of material causes and the images in it are flying shadows cast by solid external things. This is the meaning of psychic existence, and its differentia. Mind is an expression, weighted with emotion, of mechanical relations among bodies. Suppose the bodies all removed: at once the images formerly contrasted with those bodies would resume their inherent characteristics and mutual relation; they would become existences in their own category, large, moving, coloured, distributed to right and left; that is, save for their values, they would become material things.

Physics is accordingly a science which, though hypothetical and only verifiable by experiment, is involved in history and psychology and therefore in any criticism of knowledge. The contradiction would be curious if a man should declare that his ideas were worthless, being due to his organs of sense, and that therefore these organs (since he had an idea of them) did not exist. Yet on this brave argument idealism chiefly rests. It asserts that bodies are mere ideas, because it is through our bodies that we perceive them. When physics has discovered the conditions under which knowledge of physics has arisen, physics is supposed to be spirited away; whereas, of course, it has only closed its circle and justified its sovereignty. Were all science retracted and reduced to symbolic calculation nothing would remain for this calculation to symbolise. The whole force of calling a theory merely a vehicle or method of thought, leading us to something different from itself, lies in having a literal knowledge of this other thing. But such literal knowledge is the first stage of science, which the other stages merely extend. So that when, under special circumstances, we really appeal to algebraic methods of expression and think in symbols, we do so in the hope of transcribing our terms, when the reckoning is over, into the language of familiar facts. Were these facts not forthcoming, the symbolic machinery would itself become the genuine reality – since it is really given – and we should have to rest in it, as in the ultimate truth. This is what happens in mythology, when the natural phenomena expressed by it are forgotten. But natural phenomena themselves are symbols

of nothing, because they are primary data. They are the constitutive elements of the reality they disclose.

The validity of science in general is accordingly established merely by establishing the truth of its particular propositions, in dialectic on the authority of intent and in physics on that of experiment. It is impossible to base science on a deeper foundation or to override it by a higher knowledge. What is called metaphysics, if not an anticipation of natural science, is a confusion of it with dialectic or a mixture of it with myths. If we have the faculty of being utterly sincere and of disintegrating the conventions of language and religion, we must confess that knowledge is only a claim we put forth, a part of that unfathomable compulsion by force of which we live and hold our painted world together for a moment. If we have any insight into mind, or any eye for human history, we must confess at the same time that the oracular substitutes for knowledge to which, in our perplexities, we might be tempted to fly, are pathetic popular fables, having no other sanctity than that which they borrow from the natural impulses they play upon. To live by science requires intelligence and faith, but not to live by it is folly.

If science thus contains the sum total of our rational convictions and gives us the only picture of reality on which we should care to dwell, we have but to consult the sciences in detail to ascertain, as far as that is possible, what sort of a universe we live in. The result is as yet far from satisfactory. The sciences have not joined hands and made their results coherent, showing nature to be, as it doubtless is, all of one piece. The moral sciences especially are a mass of confusion. Negative, I think, must be the attitude of reason, in the present state of science, upon any hypothesis far outrunning the recorded history and the visible habitat of the human race. Yet exactly the same habits and principles that have secured our present knowledge are still active within us, and promise further discoveries. It is more desirable to clarify our knowledge within these bounds than to extend it beyond them. For while the reward of action is contemplation or, in more modern phrase, experience and consciousness, there is nothing stable or interesting to contemplate except objects relevant to action – the natural world and the mind's ideals.

Both the conditions and the standards of action lie well within the territory which science, after a fashion, already dominates. But there remain unexplored jungles and monster-breeding lairs within our nominal jurisdiction which it is the immediate task of science to clear. The darkest spots are in man himself, in his fitful, irrational disposition. Could a better system prevail in our lives a better order would establish itself in our thinking. It has not been for want of keen senses, or personal genius, or a constant order in the outer world, that mankind have fallen back repeatedly into barbarism and superstition. It has been for want of good character, good example, and good government. There is a pathetic capacity in men to live nobly, if only they would give one another the chance. The ideal of political perfection, vague

and remote as it yet seems, is certainly approachable, for it is as definite and constant as human nature. The knowledge of all relevant truth would be involved in that ideal, and no intellectual dissatisfaction would be felt with a system of ideas that should express and illumine a perfect life.

THE EFFICACY OF THOUGHT

George Santayana. "The Efficacy of Thought." *Journal of Philosophy, Psychology and Scientific Methods* 3.15 (19 July 1906): 410–412.

Professor A. W. Moore, in his courteous review of my book on 'The Life of Reason',[1] has pointed out what he feels to be a discrepancy in my language, and perhaps a difficulty in the subject-matter itself, touching a point of very great importance. This point is the sense in which mental facts may be called influential, may have a function or power.

There are many possible readings of this problem, some of which may be distinguished as follows:

1. It is a function of thought to give an intrinsic value to the moment in which it occurs. Thought has an esthetic or ecstatic quality. This function, inefficacious as it is, would suffice to make thought the most important thing in the world.

2. Thought has the power of asserting ideal verities; it has a contemplative and dialectical function. An ephemeral seraph, alone in the universe, might recite the multiplication table and die. His thought would have possessed two ideal functions, one beatifying, the other self-explicative or discursive.

3. Thought may have a transitive but merely cognitive function; it may represent, and mean to represent, some independent fact, as when I say to myself that Caesar died on the Ides of March. The eventual test of this truth, its consistency with other judgments, its prevalence, its destiny, or its being a thought that would subsist permanently in an organism usefully adapted to a special environment – all this does not enter into the cognitive pretensions of the thought. These are ideal; but as the truth of the thought hangs on the existence of the external fact to which it refers, its truth remains always an assumption from its own point of vantage; though a third person might perhaps have further means of deciding for himself whether that thought had been true or false.

4. Thought may have prophetic scope: it may foretell what is about to take place. This harmony, purely speculative in itself, would, if at all frequent, very much increase the inner wealth and dignity of thought mentioned in 1 and 3.

[1] This *Journal*, Vol. III., No. 8.

5. Mingled with prophecy may be desire; and if to confident prophecy and eager desire an eventual verification accrues, the result is a sense of power. Thought is then supposed to have brought about its own realization, and to be responsible for it. This felt efficacy is always moral, or rather magical. It is a power attributed to thought, in its ideal capacity and by virtue of its intent, to bring about what it calls for, as an incantation or an exorcism might do, through empty reaches of time and space.

6. Thought, taken as a psychological existence, might have a causal influence on a succeeding state of mind, quite apart from the ideal burden of either. Thus, a dialectical argument might bring on a headache or (if mental association were directly efficacious) hearing others speak with a certain accent might cause me to hear myself later speaking with the same, no physical links intervening.

7. Thought might be carried on for a while by dialectical progression, the meaning constituting an evolutionary 'force'. The thought might then be transformed into another irrelevant state of mind, as in 6; but a moment later this state of mind might become a cerebral process, which, in turn, might be propagated for a while mechanically, but might finally evaporate out of the physical world altogether, the 'force' of it going to constitute a fresh mental event, either irrelevant or, by reestablished harmony, cognitive of the physical fact that caused it; and so on as before.

8. Thought might be without efficacy, either in its moral or in its existential capacity; yet the bodily function, the instinct or habit, which it accompanied, might involve the maintenance of that thought, or its dialectical development in time. In this case the thought would be so grounded as to vouch for its occasional reappearance, whenever the juncture reoccurred at which it was evoked originally. Thus books, customs and works of art insure the perpetuity of spiritual experience as, in a larger sense, do the unchanged face of nature and the hereditary structure of animals. Thought might still be called efficacious in the only sense, not magical, in which its efficacy would be at all congruous with its intent; namely, through the natural efficacy of the creature whose life it expressed.

As to my personal opinion in this matter, which I am sorry to see Professor Moore finds ambiguously expounded in my book, it is probably plain enough from the above statement of the various possibilities. 1, 2, 3 and 4 describe purely ideal functions of thought, all of which it undoubtedly reaches at certain moments. 5, on the contrary, describe a superstition; yet it is this superstition, clung to by the unrecognized childishness of man, that alone induces anybody to defend the extravagances and confusions of 6 and 7. People wish thought to be mechanically efficacious because they think it would be a *better guide* than the cerebral process which underlies it; yet why a better guide, unless it operated miraculously, by its intent, and not by virtue of some irrelevant evolution of its substance? 8, accordingly, represents the conclusion

to which I arrive; and it explains certain phrases which I have not studied to avoid, thinking that their metaphorical character would be obvious to the reader. We all speak of Maithus's ideas 'governing' the movement of population, yet hardly expect to be accused of maintaining that poor Maithus's hard thinking caused Israel's fecundity or the congestion in our large cities. A thought is said to govern those portions of existence the movement of which it serves to predict or to describe. One may well say that 'reason is vital impulse modified by reflection'. It is certain that when a man 'reflects' his action changes in consequence, just as he turns aside when he 'sees' an obstacle in front of him; but as his seeing was an impression on his organs, without which his fancy would have pictured nothing, and as his turning was an instinct or habit of his organism, without which the image would have signified no danger; so the pause in reflection was a physical event, accompanied by an oscillation of projects in the mind (for reflection can not decide when reflection shall arise, nor how long it shall last, nor what course it shall take). The consequences of reflection are due to its causes, to the competitive impulses in the body, not to the wistful lucubration itself; for this is mere poetry. People's thoughts are most inadequate and choked just when their action is most rapid and urgent. That consciousness is a lyric cry, even in the midst of business, is something which must be felt, perhaps, to be understood; and they that have feeling, let them feel it.

I may add that the ambiguity which others as well as Professor Moore find in my book seems to come, at least in part, from their generously attributing to it loftier pretensions than it ever puts forth. They begin by reading into my words two doctrines which perhaps they think highly of, namely, that the genesis of knowledge is the genesis of things, and that truth is useful illusion; but they soon find that my expressions contradict these doctrines, which I not only never entertained, but can not even conceive. For in assigning any origin to nature we assume another nature operating behind, while it is hard to see how one illusion could be more useful than another in a vacuum; yet if a determinate environment existed, the true idea of it would be determined by what that environment was, not by the uses which the idea of it might have. What I can readily conceive, however, is how puzzled and disappointed a reader must be who begins by taking for a complete cosmogony what is merely a biography of human reason, and how miserably this whole drama of thought must seem to him to end, if it ends in discovering what has always been true.

RUSSELL'S PHILOSOPHICAL ESSAYS. II. THE CRITIQUE OF PRAGMATISM

George Santayana. "Russell's Philosophical Essays. II. The Critique of Pragmatism." *Journal of Philosophy, Psychology and Scientific Methods* 8.5 (2 March 1911): 113–124.

The time has not yet come when a just and synthetic account of what is called pragmatism can be expected of any man. The movement is still in a nebulous state, a state from which, perhaps, it is never destined to issue. The various tendencies that compose it may soon cease to appear together; each may detach itself and be lost in the earlier system with which it has most affinity. The reader will probably remember Professor Lovejoy's "Thirteen Pragmatisms"; and besides such distinguishable tenets, there are in pragmatism echoes of various popular moral forces, like democracy, impressionism, love of the concrete, respect for success, trust in will and action, and the habit of relying on the future, rather than on the past, to justify one's methods and opinions. Most of these things are characteristically American; and Mr. Russell touches on some of them with more wit than sympathy. Thus he writes: "The influence of democracy in promoting pragmatism is visible in almost every page of William James's writing. There is an impatience of authority, an unwillingness to condemn widespread prejudices, a tendency to decide philosophical questions by putting them to a vote, which contrast curiously with the usual dictatorial tone of philosophic writings.... A thing which simply *is* true, whether you like it or not, is to him as hateful as a Russian autocracy; he feels that he is escaping from a prison, made not by stone walls but by 'hard facts', when he has humanized truth, and made it, like the police force in a democracy, the servant of the people instead of their master. The democratic temper pervades even the religion of the pragmatists; they have the religion they have chosen, and the traditional reverence is changed into satisfaction with their own handiwork. 'The prince of darkness,' James says, 'may be a gentleman, as we are told he is, but whatever the God of earth and heaven is, he can surely be no gentleman.' He is rather, we should say, conceived by pragmatists as an elected president, to whom we give a respect which is really a tribute to the wisdom of our own choice. A government in which we have no voice is repugnant to the democratic temper. William James carries up to heaven the revolt of his New England ancestors:

the Power to which we can yield respect must be a George Washington rather than a George III."

Many emotional impulses of this sort might be discovered in pragmatism; and yet what seems to be, at this moment, the dominant note, among those who have most felt the influence of the movement, is what is called the New Realism; and to something very like this, under the name of Radical Empiricism, Professor James himself seemed to turn in the end as to a haven after the storm. But this new realism is not a doctrine resting at all on vague moral aspirations. It is nothing if not positive, scientific, and (most unlike the earlier pragmatism) even materialistic and mathematical. What it chiefly inherits from pragmatism, however, is the determination to reduce ideal relations, such as that of knowing, to natural relations between dynamic processes. That such dynamic natural relations underlie knowing and all spiritual activity was surely the guiding insight of pragmatism, on its technical side; while the habit, most unfortunate, as it seems to me, of actually identifying these natural relations with the ideal ones in which they find conscious expression, has been the source of infinite confusion, both to pragmatists and to their opponents, and the ground of that decided rejection which the new doctrine has met with in almost every quarter.

It is not, however, in any general picture of pragmatism that Mr. Russell might draw that the value of his criticism would be likely to lie. He attempts no such picture; and his exact and spare way of philosophizing would hardly be suited to the task. That would require a delicate blending of historical perspectives and some faith in blundering, kindly, brave human nature. What Mr. Russell catches and dwells upon are certain high lights of pragmatic theory; and however inadequately these precise points, even when added together, may represent the movement, they are of interest in themselves, and what our critic has to say on them is keen and cogent and, to my mind, altogether final.

A point of fundamental importance, about which pragmatists have been far from clear, and perhaps not in agreement with one another, is the sense in which their psychology is to be taken. "The facts that fill the imaginations of pragmatists," Mr. Russell writes (p. 104), "are psychical facts; where others might think of the starry heavens, pragmatists think of the perception of the starry heavens; where others think of God, pragmatists think of the belief in God, and so on. In discussing the sciences, they never think, like scientific specialists, about the facts upon which scientific theories are based; they think about the theories themselves. Thus their initial question and their habitual imaginative background are both psychological." This is so true that unless we make the substitution into psychic terms instinctively, the whole pragmatic view of things will seem paradoxical, if not actually unthinkable. For instance, pragmatists might protest against the accusation that "they never think about the facts upon which scientific theories are based," for they lay

a great emphasis on facts. Facts are the cash which the credit of theories hangs upon. Yet, this protest, though sincere, would be inconclusive, and in the end it would illustrate Mr. Russell's observation, rather than refute it. For we should presently learn that these facts can be made by thinking, that our faith in them may contribute to their reality, and may modify their nature; in other words, these facts are our immediate apprehensions of fact, which it is indeed conceivable that our temperaments, expectations, and opinions should modify. Thus the pragmatist's reliance on facts does not carry him beyond the psychic sphere; his facts are only his personal experiences. Personal experiences may well be the basis for no less personal myths; but the effort of intelligence and of science is rather to find the basis of the personal experiences themselves; and this non-psychic basis of experience is what common sense calls the facts, and what practice is concerned with. Yet these are not the *pragmata* of the pragmatist, for it is only the despicable intellectualist that can arrive at them; and the bed-rock of facts that the pragmatist builds upon is avowedly drifting sand. Hence the odd expressions, new to literature and even to grammar, which bubble up continually in pragmatist writings. "For illustration take the former fact that the earth is flat,"[1] says one, quite innocently; and another observes that "two centuries later, nominalism was evidently true, because it alone would legitimize the local independence of cities."[2] Lest we should suppose that the historical sequence of these "truths" or illusions is, at least, fixed and irreversible, we are soon informed that the past is always changing, too; that is (if I may rationalize this mystical dictum), that history is always being rewritten, and that the growing present adds new relations to the past, which lead us to conceive or to describe it in some new fashion. Even if the ultimate inference is not drawn, and we are not told that this changing idea of the past is the only past that exists – the real past being unattainable and therefore, for personal idealism, non-existent – it is abundantly clear that the effort to distinguish fact from theory can not be successful, so long as the psychological way of thinking prevails; for a theory, psychologically considered, is a bare fact in the experience of the theorist, and the other facts of his experience are so many other momentary views, so many scant theories, to be immediately superseded by other "truths in the plural." Sensations and ideas are really distinguishable only by reference to what is assumed to lie without; of which external reality experience is always an effect (and in that capacity is called sensation) and often at the same time an apprehension (and in that capacity is called idea).

It is a crucial question, then, in the interpretation of pragmatism, whether the psychological point of view, undoubtedly prevalent in that school, is the

[1] "Studies in Logical Theory," edited by John Dewey, p. 106.

[2] This *Journal*, Vol. IV., No. 24, p. 661.

only or the ultimate point of view which it admits. The habit of studying ideas rather than their objects might be simply a matter of emphasis or predilection. It might merely indicate a special interest in the life of reason, and be an effort, legitimate under any system of philosophy, to recount the stages by which human thought, developing in the bosom of nature, may have reached its present degree of articulation. I myself, for instance, like to look at things from this angle: not that I have ever doubted the reality of the natural world, or been able to take very seriously any philosophy that denied it, but precisely because, when we take the natural world for granted, it becomes a possible and enlightening inquiry to ask how the human animal has come to discover his real environment, in so far as he has done so, and what dreams have intervened or supervened in the course of his rational awakening. To the habit of studying in this way the tragi-comedy of cognitive experience, I probably owe the generous appreciation, somewhat disconcerting at times, with which some pragmatists have honored me, as well as the contempt or distrust my writings seem to inspire in other critics, who think me a confused babbler and a romanticist, because indeed I am more interested in the general imaginative life of mankind than in the few shreds of it that these same critics cherish as dogmas; for if they believed simply, as I do, in the natural world, they would not have misunderstood my intention. On the other hand, a psychological point of view might be equivalent to the idealistic doctrine that the articulation of human thought constitutes the only structure of the universe, and its whole history. This may be the position of Mr. Schiller, but hardly that of the other leaders of the pragmatist school. I remember Professor Dewey saying in conversation that he did not doubt that the mind of a friend of ours, *M*, existed independently of our ideas of *M*'s mind; but it was not for philosophy to discuss that independent being; the business of philosophy was merely to fix the logic and system of our own knowledge. According to this view, pragmatism would seem to be a revised version of the transcendental logic, leaving logic still transcendental, that is, still concerned with the evolution of the categories. The revision would consist chiefly in this, that empirical verification, utility, and survival would take the place of dialectical irony as the force governing the evolution. It would still remain possible for other methods of approach than this transcendental pragmatism, for instinct, perhaps, or for revelation, to bring us into contact with things-in-themselves. A junction might thus be effected with the system of M. Bergson, which would lead to this curious result: that pragmatic logic would be the method of intelligence, because intelligence is merely a method, useful in practice, for the symbolic and improper representation of reality; while another non-pragmatic method – sympathy and dream – would alone be able to put us in possession of direct knowledge and genuine truth. So that, after all, the pragmatic "truth" of working ideas would turn out to be what it has seemed hitherto to mankind, namely, no real truth, but rather a convenient sort of fiction,

which ceases to deceive when once its merely pragmatic value is discounted by criticism.

I remember, too, once putting a question on this subject to Professor James also; and his answer was one which I am glad to be able to record. In relation to his having said that "as far as the past facts go, there is no difference, ... be the atoms or be the God their cause,"[3] I asked whether, if God had been the cause, apart from the value of the idea of him in our calculations, his existence would not have made a difference to *him*, as he would be presumably self-conscious. "Of course," said Professor James, "but I wasn't considering that side of the matter; I was thinking of our idea." The choice of the subjective point of view, then, was deliberate here, and frankly arbitrary; it was not intended to exclude the possibility or legitimacy of the objective attitude. And the original reason for deliberately ignoring, in this way, the realistic way of thinking, even while admitting (like Professor Dewey) that it represents the real state of affairs, would have been, I suppose, that what could be verified was always some further effect of the real objects, and never those real objects themselves; so that for interpreting and predicting our personal experience on1y the hypothesis of objects was pertinent, while the objects themselves, except as so represented, were useless and unattainable. The case, if I may adapt a comparison of Mr. Russell's, was as if we possessed a catalogue of the library at Alexandria, all the books being lost forever; it would be only in the catalogue that we could practically verify their existence or character, though doubtless, by some idle flight of imagination, we might continue to think of the books, as well as of those titles in the catalogue which alone could appear to us in experience. Pragmatism, approached from this side, would then seem to express an acute critical conscience, a sort of will not to believe; not to believe, I mean, more than is absolutely necessary for solipsistic practice.

Such economical faith, enabling one to dissolve the hard materialistic world into a work of mind, which mind might outflank, was traditional in the radical Emersonian circles in which pragmatism sprang up. It is one of the approaches to the movement; yet we may safely regard the ancestral transcendentalism of the pragmatists as something which they have turned their back upon, and mean to disown. It is destined to play no part in the ultimate result of pragmatism. This ultimate result promises to be, on the contrary, a direct and materialistic sort of realism. This alone is congruous with the scientific affinities of the school and its young American temper. Nor is the transformation very hard to effect. The world of solipsistic practice, if you remove the romantic self that was supposed to evoke it, becomes at once the sensible world; and the problem is only to find a place in the mosaic of objects of sensation for those cognitive and moral functions which the soul was once

[3] "Pragmatism," p. 101.

supposed to exercise in the presence of an independent reality. But this problem is precisely the one that pragmatists boast they have already solved; for they have declared that consciousness does not exist, and that objects of sensation (which at first were called feelings, experiences, or "truths") know or mean one another when they lead to one another, when they are poles, so to speak, in the same vital circuit. The spiritual act which was supposed to take things for its object is to be turned into "objective spirit," that is, into dynamic relations between things. Rather than admit that the mind of *M* exists, but is beyond the reach of philosophy, this post-pragmatic theory will identify the mind of *M* with a material system consisting of *M*'s body and such surrounding objects as *M*'s body is reacting upon. The philosopher will deny that he has any other sort of mind himself, lest he should be shut up in it again, like a sceptical and disconsolate child; while if there threatens to be any covert or superfluous reality in the self-consciousness of God, nothing will be easier than to deny that God is self-conscious; for indeed, if there is no consciousness on earth, why should we imagine that there is any in heaven? The psychologism with which the pragmatists started seems to be passing in this way, in the very effort to formulate it pragmatically, into something which, whatever it may be, is certainly not psychologism. But the bewildered public may well ask whether it is pragmatism either.

There is another crucial point in pragmatism which the defenders of the system are apt to pass over lightly, but which Mr. Russell regards (justly, I think) as of decisive importance. Is, namely, the pragmatic account of truth intended to cover all knowledge, or one kind of knowledge only? Apparently the most authoritative pragmatists admit that it covers one kind only; for there are two sorts of self-evidence in which, they say, it is not concerned: first, the dialectical relation between essences; and second, the known occurrence or experience of facts. There are obvious reasons why these two kinds of cognitions, so interesting to Mr. Russell, are not felt by pragmatists to constitute exceptions worth considering. Dialectical relations, they will say, are verbal only; that is, they define ideal objects, and certainty in these cases does not coerce existence, or touch contingent fact at all. On the other hand, such apprehension as seizes on some matter of fact, as for instance, "I feel pain," or "I expected to feel this pain, and it is now verifying my expectation," though often true propositions, are not *theoretical* truths; they are not, it is supposed, questionable beliefs but rather immediate observations. Many of these apprehensions of fact (or all, perhaps, if we examine them scrupulously) involve the veracity of memory, surely a highly questionable sort of truth; and, moreover, verification, the pragmatic test of truth, would be obviously impossible to apply, if the prophecy supposed to be verified were not assumed to be truly remembered. How shall we know that our expectation is fulfilled, if we do not know directly that we had such an expectation? But if we know our past experience directly – not merely knew it when present, but know now

what it was, and how it has led down to the present – this amounts to enough knowledge to make up a tolerable system of the universe, without invoking pragmatic verification or "truth" at all. I have never been able to discover whether, by that perception of fact which is not "truth" but fact itself, pragmatists meant each human apprehension taken singly, or the whole series of these apprehensions. In the latter case, as in the philosophy of M. Bergson, all past reality might constantly lie open to retentive intuition, a form of knowledge soaring quite over the head of any pragmatic method or pragmatic "truth." It looks, indeed, as if the history of at least personal experience were commonly taken for granted by pragmatists, as a basis on which to rear their method. Their readiness to make so capital an assumption is a part of their heritage from romantic idealism. To the romantic idealist science and theology are tales which ought to be reduced to an empirical equivalent in his personal experience; but the tale of his personal experience itself is a sacred figment, the one precious conviction of the romantic heart, which it would be heartless to question. Yet here is a kind of assumed truth which can not be reduced to its pragmatic meaning, because it must be true literally in order that the pragmatic meaning of other beliefs may be conceived or tested at all.

Now, if it be admitted that the pragmatic theory of truth does not touch our knowledge either of matters of fact or of the necessary implications of ideas, the question arises: What sort of knowledge remains for pragmatic theory to apply to? Simply, Mr. Russell answers, those "working hypotheses" to which "prudent people give only a low degree of belief" (p. 147). For "we hold different beliefs with very different degrees of conviction. Some – such as the belief that I am sitting in a chair, or that 2 + 2= 4 – can be doubted by few except those who have had a long training in philosophy. Such beliefs are held so firmly that non-philosophers who deny them are put into lunatic asylums. Other beliefs, such as the facts of history, are held rather less firmly.... Beliefs about the future, as that the sun will rise to-morrow and that the trains will run approximately as in Bradshaw, may be held with almost as great conviction as beliefs about the past. Scientific laws are generally believed less firmly.... Philosophical beliefs, finally, will, with most people, take a still lower place, since the opposite beliefs of others can hardly fail to induce doubt. Belief, therefore, is a matter of degree. To speak of belief, disbelief, doubt, and suspense of judgment as the only possibilities is as if, from the writing on the thermometer, we were to suppose that blood heat, summer heat, temperate, and freezing were the only temperatures" (p. 145). Beliefs which require to be confirmed by future experience, or which actually refer to it, are evidently only presumptions; it is merely the truth of presumptions that empirical logic applies to, and only so long as they remain presumptions. Presumptions may be held with very different degrees of assurance, and yet be acted upon, in the absence of any strong counter-suggestion; as the confi-

dence of lovers or of religious enthusiasts may be at blood heat at one moment and freezing at the next, without a change in anything save in the will to believe. The truth of such presumptions, whatever may be the ground of them, depends in fact on whether they are to lead (or, rather, whether the general course of events is to lead) to the further things presumed; for these things are what the presumptions refer to explicitly.

It sometimes happens, however, that presumptions (being based on voluminous blind instinct rather than on distinct repeated observations) are expressed in consciousness by some symbol or myth, as when a man says he believes in his luck; the presumption really regards particular future chances and throws of the dice, but the emotional and verbal mist in which the presumption is wrapped, veils the pragmatic burden of it; and a metaphysical entity arises, called luck, in which a man may think he believes rather than in a particular career that may be awaiting him. Now since this entity, luck, is a mere word, confidence in it, to be justified at all, must be transferred to the concrete facts it stands for. Faith in one's luck must be pragmatic, but simply because faith in such an entity is not needful nor philosophical at all. The case is the same with working hypotheses, when that is all they are; for on this point there is some confusion. Whether an idea is a working hypothesis merely or an anticipation of matters open to eventual inspection may not always be clear. Thus the atomic theory, in the sense in which most philosophers entertain it to-day, seems to be a working hypothesis only; for they do not seriously believe that there are atoms, but in their ignorance of the precise composition of matter, they find it convenient to speak of it as if it were composed of indestructible particles. But for Democritus and for many modern men of science the atomic theory is not a working hypothesis merely; they do not regard it as a provisional makeshift; they regard it as a probable, if not a certain, anticipation of what inspection would discover to be the fact, could inspection be carried so far; in other words, they believe the atomic theory is true. If they are right, the validity of this theory would not be that of pragmatic "truth" but of pragmatic "fact"; for it would be a view, such as memory or intuition or sensation might give us, of experienced objects in their experienced relations; it would be the communication to us, in a momentary dream, of what would be the experience of a universal observer. It would be knowledge of reality in M. Bergson's sense. Pragmatic "truth," on the contrary, is the relative and provisional justification of fiction; and pragmatism is not a theory of truth at all, but a theory of theory, when theory is instrumental. For theory has more than one signification. It may mean such a symbolic or foreshortened view, such a working hypothesis, as true and full knowledge might supersede; or it may mean this true and full knowledge itself, a synthetic survey of objects of experience in their experimental character. Algebra and language are theoretical in the first sense, as when a man believes in his luck; historical and scientific imagination are theoretical in the second

sense, when they gather objects of experience together without distorting them. But it is only to the first sort of theory that pragmatism can be reasonably applied; to apply it also to the second would be to retire into that extreme subjectivism which the leading pragmatists have so hotly disclaimed. We find, accordingly, that it is only when a theory is avowedly unreal, and does not ask to be believed, that the value of it is pragmatic; since in that case belief passes consciously from the symbols used to the eventual facts in which the symbolism terminates, and for which it stands.

It may seem strange that a definition of truth should have been based on the consideration of those ideas exclusively for which truth is not claimed by any critical person, such ideas, namely, as religious myths or the graphic and verbal machinery of science. Yet the fact is patent, and if we considered the matter historically it might not prove inexplicable. Theology has long applied the name truth preeminently to fiction. When the conviction first dawned upon pragmatists that there was no absolute or eternal truth, what they evidently were thinking of was that it is folly, in this changing world, to pledge oneself to any final and inflexible creed. The pursuit of truth, since nothing better was possible, was to be accepted instead of the possession of it. But it is characteristic of Protestantism that, when it gives up anything, it transfers to what remains the unction, and often the name, proper to what it has abandoned. So, if truth was no longer to be claimed or even hoped for, the value and the name of truth could be instinctively transferred to what was to take its place – spontaneous, honest, variable conviction. And the sanctions of this conviction were to be looked for, not in the objective reality, since it was an idle illusion to fancy we could get at that, but in the growth of this conviction itself, and in the prosperous adventure of the whole soul, so courageous in its self-trust, and so modest in its dogmas. Science, too, has often been identified, not with the knowledge men of science possess, but with the language they use. If science meant knowledge, the science of Darwin, for instance, would lie in his observations of plants and animals, and in his thoughts about the probable ancestors of the human race – all knowledge of actual or possible facts. It would not be knowledge of "selection" or of "spontaneous variation," terms which are mere verbal bridges over the gaps in that knowledge, and mark the *lacunae* and unsolved problems of the science. Yet it is just such terms that seem to clothe "Science" in its pontifical garb; the cowl is taken for the monk; and when a penetrating critic, like M. Henri Poincaré, turns his subtle irony upon them, the public cries that he has announced the "bankruptcy of science," whereas it is merely the language of science that he has reduced to its pragmatic value – to convenience and economy in the registering of facts – and has by no means questioned that positive and cumulative knowledge of facts which science is attaining. It is an incident in the same general confusion that a critical epistemology, like pragmatism, analyzing these figments of scientific or theological theory,

should innocently suppose that it was analyzing "truth"; while the only view to which it really attributes truth is its view of the system of facts open to possible experience, a system which those figments presuppose and which they may help us in part to supply, where it is accidentally hidden from human inspection.

Mr. Russell, with the candor and courage that distinguish him, has not wished to aim these and similar cruel shafts at the pragmatist without exposing himself in turn to attack, and his book closes with a brief but complicated essay "On the Nature of Truth." In asserting the truth or falsity of any opinion, it is assumed that the force of the predicates "true" and "false" is perfectly well known; but what *is* the force of these predicates? Mr. Russell begins his reply by agreeing with Professor James on the point that truth should be predicated of beliefs, not of things. "When, for example, we see the sun shining, the sun itself is not 'true', but the judgment 'the sun is shining' is true" (p. 172). Thus "it is plain that there can be no truth or falsehood unless there are minds to judge. Nevertheless it is plain, also, that the truth or falsehood of a given judgment depends in no way upon the person judging, but solely upon the facts about which he judges." Were there no false judgments it would be plausible, Mr. Russell thinks, to assume a true "objective," that is, an objective truth, which the true judgment asserts; but it is not possible to admit false "objectives" to match, and, as false judgments assert something, the theory of true "objectives" for truths must be abandoned. Instead we may postulate a number of objective terms, standing in some objective relation to one another; and a true judgment will be one that assigns to those several terms the relation in which they actually stand. "Every judgment is a relation of a mind to several objects, one of which is a relation; the judgment is true when the relation which is one of the objects relates the other objects, otherwise it is false" (p. 181). And we learn subsequently that this relation must not be conceived too abstractly, so as to be reversible; it may hold in one direction only, and that direction must, in that case, be specified in the true judgment.

I confess to some surprise that Mr. Russell should admit that there can be no truth unless there are minds. When one holds that ideal essences and facts and the relations between them are all independent of the judging mind, it seems unnatural to assert that this existing standard for true judgments is not itself the truth. Of course truth is not synonymous with reality; but "the truth," as I apprehend the force of that phrase, means the form of reality, or the complex of all those possible judgments which the reality justifies. This complex of possible true judgments would be determined by the reality whether any one ever pronounced any of those judgments or not; so that it would be, at the very most, possible minds, and not actual minds, that would be involved in the being of truth. Nor does the difficulty about "objectives" for error, which Mr. Russell puts forward, seem to me very serious. The

content, or the esthetic essence, envisaged in a false judgment is one thing, and the external object, or the complex of necessary relations, in which that essence is alleged to lie, is quite another. The form of reality is the standard for errors as well as for truths; if error did not mean to describe reality it would not be error, but mere imagination. The "objective" which a false judgment requires, so that it may assert something, is its own content or esthetic essence; the "objective" which it requires, so that it may be true or false, is the truth outside. I may not have fully understood Mr. Russell's argument, which is very concise; but the conclusion, at which he arrives, that false judgments must have complex objects, seems certain on other grounds. If reality had no multiplicity we should either have to apprehend it truly or not to refer to it at all. What exposes us to err is that we may conceive one element of reality, fixing upon it by some sign that determines it sufficiently, and then combine with it other elements which are not conjoined with it in fact.

Perhaps some of the difficulties which meet Mr. Russell here may be due to another tenet of his, which itself seems very questionable, namely, that perception, as distinguished from judgments based upon it, is infallible. If we subtract the accompanying judgments from perception, however, what remains would not appear to be still a judgment; it would be merely an essence presented; and why need the sense-datum, or esthetic essence, which perception presents, have any further embodiment in the universe? Doubtless, there are no perceptions without a material cause, as there can be none without an esthetic essence; but it is a long way round – the whole long circuit of human disillusion and science – from the first esthetic essence, perceived in a dream, to the ultimate knowledge of what may have been its cosmic causes. Professor James used to exclaim, when he was startled by some fresh and unlooked-for misunderstanding, that you could say nothing safely in philosophy unless you said everything; and I suspect that these obscure points in Mr. Russell's doctrine will be made clearer when he has given us his views on the material world, and on psychology; for there are hints in his writings, and in Mr. Moore's, of a new realism with an atomic migratory soul, genuine matter, and secondary qualities subsisting independently in objects; a system which promises to be no less interesting than the new realism already launched in America, and possibly more complete.

BELIEF IN EXPERIENCE

George Santayana. "Belief in Experience." *Scepticism and Animal Faith* (New York: Charles Scribner's Sons, 1923), chap. 15, pp. 134–144.

I have now agreed to believe that discourse is a contingent survey of essence, partial, recurrent, and personal, with an arbitrary starting-point and an arbitrary direction of progress. It picks up this essence or that for no reason that it can assign. However dialectical the structure of the theme considered may be, so that its various parts seem to imply one another, the fact that this theme rather than any other is being considered is a brute fact: and my discourse as a whole is a sheer accident, initiated, if initiated at all, by some ambushed power, not only in its existence, but in its duration, direction, and scope.

Nevertheless this fatality does not raise any problem in that discourse itself, because it occasions no surprise. Problems are created after discourse is in full swing, by contradictory presumptions or aching voids arising within it. There are no problems in nature, and none in the realm of essence. Existence – the most inexplicable of surds – is itself no problem in its own eyes: it takes itself blandly for granted, so long as it is prosperous. This is a healthy dullness on its part, because if there is no reason why a particular fact should exist rather than any other, or none at all, there is also no reason why it should not exist. The philosopher who has learned to make nature the standard of naturalness will not wonder at it. He will repeat on a large scale that act of ready submission to fate which every new-born intuition performs spontaneously. It does not protest against its sudden existence. It is not surprised at the undeserved favour that has fallen to its share. It modestly and wisely forgets itself and notes only the obvious, profoundly self-justified essence which appears before it. That this essence might just as well, or might far better, have been replaced by some other is not a suggestion to be possibly gathered from that essence itself. Nor is the psyche (the ambushed power from which the intuition actually comes) less self-satisfied and at peace. The psyche, too, takes her own idiosyncrasy for granted, singular and highly determinate as this is, and extraordinarily censorious concerning all other things. Her nature seems to her by right everlasting, and that to which it is the obvious duty of all other things to adjust themselves. God, too, if we refer these agreeable fatalities ultimately to his decrees, is conceived in like manner never to wonder why he exists although evidently nothing could have previ-

ously demanded his existence, or prepared the way for it, or made it intelligible. Nevertheless the mortal psyche perhaps thinks she sees the secret even of that, because it was necessary that God should exist in order to make her own existence perfectly safe, legitimate, and happy for ever. This assurance is needed, because there are unfortunately some circumstances that might suggest the opposite.

Before turning to these circumstances, it may be well to observe that actual discourse, as distinguished from the internal dialectic of essences, may have any degree of looseness; that is, the terms which it takes up in succession may have nothing to do with one another essentially. There is no added paradox in this: what is groundless and irrational in its inception may well be groundless and irrational in its procedure, and an appearance that has no reason for arising has no reason for not yielding to any other appearance, or to vacancy. And yet sometimes the course of appearances does produce wonder and discontent. How can this be? If I am not surprised at beginning to exist, or at finding something before me, since present being cannot contain any presumption or contradiction against itself, so it would seem that I should not be surprised at any changes in existence, however radical and complete. Often, indeed, I am not surprised, but follow the development of discourse, as in a dream, with perfect acquiescence, or even with a distinct premonition of what is coming, and eagerness that it should come. If I were a pure spirit, or even an open mind, this ought to be always the case. However different essences may be, they cannot in their own realm exclude or contradict one another; there, infinite diversity provokes no conflict and imposes no alternatives, and the being of anything, far from impeding that of other things, seems positively to invite and to require it, somewhat as every part of Euclidean space, far from denying the other parts, implies them. Irrelevance is, as it were, mere distance; and there is nothing strange or evil in quickness of thought, that should jump from one essence to another altogether dissimilar to it, or even contrary.

And yet I cannot prolong or intensify discourse without soon coming upon what I call interruption, confusion, doubt, or contradiction. An impulse to select, to pursue, and to reject specific essences insinuates itself into discourse. Why this animosity or this impatience? I do not disparage, nor subordinate, nor remove the circle from the realm of essence, when I think of the square and say it is no circle. Why then should I be angry if I find the one rather than the other? Evidently my discourse here is not pure contemplation. Of course, no essence is any other essence; but a clear spirit would not call any two essences incompatible. Their diversity is part of their being; they *are* because, each being eternally itself, the two are eternally different. If they are incompatible, I must ask: Incompatible for what purpose? Even in calling them contradictory, I am surreptitiously speaking for some hidden interest, which cannot put up with them both. There is an inertia or prior direction

somewhere, in the region of what I call myself, that demands one of them, and rejects the other for the innocent crime of not being that one. The incongruous essence appearing offends me because I am wedded to an old one, and to its close relations. I will tolerate nothing but what I meant should come, what fills my niche, and falls in with my undertaking.

Irrelevance, incongruity, and contradiction are accordingly possible in discourse only because discourse is not a play of essences but a play of attention upon them; which attention is no impartial exercise of spirit but a manifestation of interest, intent, preference, and preoccupation. A hidden life is at work. If I deny this, because my skepticism eschews everything hidden, I must consistently abandon all dialectic and revert to undirected dreaming, without comments on my dream intended to be veridical: because if the least comment on my dreams were veridical I must begin at once to reject, in my comments, all the essences suggesting themselves which deviate from that particular dream I mean to describe. Meaning, which is my guide in discriminating one suggestion from another as being the right one, springs from beneath the surface; it is a nether influence. It is a witness to my psychic life going on beneath, which can be disturbed by the intrusion of one event, or furthered by another; and this subterranean impulse breaks out into judgments about the rightness and wrongness of essences – utterly absurd and unmeaning judgments if the essences were considered simply in themselves. If I feel that they clash, if I make a stumbling-block of their irrelevance or diversity, I prove that I am discoursing about them for an ulterior purpose, in the service of some alien interest. I am stringing my pearls; therefore I require them to be of a particular quality. I am a collector, not a poet; and what concerns me, even in the purest dialectic or the most desultory dream, is not to explore essence, but to gather *experience*. The psyche below is busy selecting her food, fortifying her cave, and discriminating her friends from her enemies; and in these meanderings of mine over the realm of essence, in spite of myself, I am only her scout.

By experience I understand a fund of wisdom gathered by living. I call it a fund of wisdom, rather than merely memora or discursive ideation, because experience accrues precisely when discrimination amongst given essences is keenest, when only the relevant is retained or perhaps noticed, and when the psyche sagaciously interprets data as omens favorable or unfavorable to her interests, as perilous or inviting, and, if she goes wrong, allows the event to correct her interpretation. I think it mere mockery to use the word experience for what is not learning or gathering knowledge of facts; if experience taught me nothing it would not be experience, but reverie. Experience accordingly presupposes intent and intelligence, and it also implies, as will appear presently, a natural world in which it is possible to learn to live better by practicing the arts.

Intuition is an event, although it reveals only an essence; and in like manner discourse is an experience, even when its deliverance is mere dialectic. It is an

experience for two reasons: first, because it is guided unawares by the efforts of the psyche to explore, not the realm of essence, but the world that controls her fortunes, and secondly, because the essences unrolled before it, apparently at random and for no reason, really convey knowledge, in reality they are manifestations to the psyche of that surrounding world which it concerns her to react upon wisely. Discourse is hers; and it is full of the names – since images not auditory may be names also – which she gives to her friends and enemies, and of her ingenious imaginations concerning their ways. However original the terms of discourse may be, under the control of the psyche and her environment they fall into certain rhythms; they run into familiar sequences; they become virtual and available knowledge of things, persons, nature, and the gods. Imagination would be very insecure and inconstant in these constructions, and they would not become automatic habits in discourse, if instinct within and nature without did not control the process of discourse, and dictate its occasions. So controlled, discourse becomes experience.

That discourse is secretly an experience, and may be turned into knowledge, becomes particularly evident when it is interrupted by *shocks*. Not only may an essence suddenly present itself which was not the essence I expected or should have welcomed, but the whole placid tenor of my thoughts may be arrested or overwhelmed. I may suffer a sort of momentary and conscious death, in that I survive to feel the extinction of all that made up my universe, and to face a blank, or a precipice. When in my placid discourse one thing seemed to contradict another, they were but rival images in the same field, and I had but to choose between them, and proceed with the argument. Shock contradicts nothing, but uproots the whole experience. The lights go out on the stage, and discourse loses its momentum.

In the sense of contradiction there is probably some element of shock. The purest aesthetic or logical contemplation hardly goes on without a throbbing accompaniment of interest, haste, reversals, and satisfactions; but these dramatic notes are merged in the counterpoint of the themes surveyed, and I think, prove, and enjoy without noticing that I do so. But when a clap of thunder deafens me, or a flash of lightning at once dazzles and blinds me, the fact that something has *happened* is far more obvious to me than just what it is that has occurred; and there are perhaps shocks internal to the psyche in which the tension of the event reaches a maximum, whilst the nature of it remains so obscure that perhaps my only sense of it is a question, a gasp, or a recoil. The feeling present in such a case is, with but little further qualification, the sheer feeling of experience.

Now experience of the most brutal and dumbest sort may be theoretically described, and described exhaustively, in terms of the successive intuition of essences; for loudness, dazzlingness, pain, or terror are essences or elements of essences like any other data; and when such essences are present, all is present that it is possible ever to feel in that direction, and with any degree

of intensity. Utter blankness, intolerable strain, shrieking despair, is just the essences they are, and they are unrolled and revealed to intuition like any other essences. But such intuitions, being those proper to the most brutal and rudimentary life, have a suasion in them out of all proportion to their articulation, or rather, we might almost say, inversely proportional to it; as if the more an experience meant the less it cried out, and the more it cried out the less it meant. The purest discourse is (without noticing it) an experience and the blindest experience (also without noticing it) is a discourse, since we should not call it experience if it contained no sense of passage, no experiential perspective; but in proportion as shock cancels discourse and obliterates its own background, experience becomes mere experience, and inarticulate.

In brute experience, or shock, I have not only a clear indication, for my ulterior reflection, that I exist, but a most imperious summons at that very moment to *believe* in my existence. Discourse, as I first disentangled the evidence for it from the pure intuition of essence, seemed to be a progressive observation of the permanent – studious attention perusing and registering the essential mutual relations of given terms. But now, when shock interrupts me, discourse suffers violence. The subject-matter itself takes up arms; one object leaves me in the lurch, while another, quite irrelevantly, assaults me. And since my discourse witnesses and records this revolution, I must now assert it to be a permanent knowledge of the changing.

Shocks *come*: if they did not *come*, if I had not pre-existed, if I had never been anything more than the intuition of this shock, then this shock would not be a shock in fact, but only the illusion of a shock, only the essence of shock speciously persuading me that something had happened, when in fact nothing had occurred. If the sense of shock does not deceive me, I must have passed from a state in which the shock was not yet, into the state in which the shock first startled me; and I must since have passed from that startled state into another, in which my intuition covers synthetically the coming, the nature, and the subsidence of that shock; so that I am aware how startled I was, without being startled afresh now. A wonderful and ambiguous presence of the absent and persistence of the receding, which is called *memory*. My objects have receded, yet I continue to consider them. They are no longer essences, but facts, and my consideration is not intuition of something given but faith in something absent, and a persistent indication of it as still the same object, although my image of it is constantly changing, is perhaps intermittent, and probably grows fainter, vaguer, and more erroneous at every instant.

Experience of shock, if not utterly delusive, accordingly establishes the validity of memory and of transitive knowledge. It establishes realism. If it be true that I have ever had any experience, I must not only have existed unawares in order to gather it, but I am justified in explicitly asserting a whole realm of existence, in which one event may contain realistic knowledge of

another. Experience, even conceived most critically as a series of shocks overtaking one another and retained in memory, involves a world of independent existences deployed in an existing medium. Belief in experience is belief in nature, however vaguely nature may as yet be conceived, and every empiricist is a naturalist in principle, however hesitant his naturalism may be in practice.

Nevertheless shock, like any other datum, intrinsically presents an essence only, and *might* be nothing more; but in that case the dogmatic suasion of it (which alone lends interest to so blank an experience) would be an illusion. The intuition would be what it is, but it would be nobody's intuition, and it would mean nothing. For I should not be a self, if that intuition made up my whole being, so that it involved no change in my condition, but was perhaps itself the whole universe. Shock will not suffer me, while it lasts, to entertain any such hypothesis. It is itself the most positive, if the blindest, of beliefs; it loudly proclaims an event; so that if by chance the change which I feel were merely a feeling within the unity of apperception, shock would be an illusion, in the only sense in which this can be said of any intuition: it would incite me to a false belief that something like the given essence existed. If the change has really occurred, and not merely been imagined, shock is not only intuition of change, but trouble in a process of change enveloping that intuition. I am right in positing a desultory experience in which this intuition is an incident. I am not a spectator watching this cataract, but a part of the water precipitated over the edge. Thus if being shocked was, as perhaps it ought to be, the first sensation in life, it proclaimed the existence of a previous state without sensation. Unless it is an illusion, which I cannot admit while I feel it, it implies variation in a voluminous vegetative life in which the sense of surprise is a true indication of novelty.

Before I had noticed shock, or consented to accept its witness, I had already admitted, on dialectical grounds, that discourse was a process; but now that I observe how shocks, more or less violent, interrupt discourse at every moment, I can call discourse experience. For now I see that in endeavoring to trace dialectical relations discourse is not itself dialectical. Sheer chance decides whether it shall pursue faithfully the theme it may have picked out, as sheer chance decided that it should pick up that theme in particular. In my theoretical bewilderment and helplessness before this absolute contingency of all themes and all data, I am steadied only by animal presumptions, habits, expectations, or omens, all of which my skeptical reflection must condemn as utterly arbitrary. I can only say that I am the sport of an unfathomable destiny; that in these shocks that fall upon me thick and fast, and in the calmer stretches between them, miscellaneous essences are revealed to me, most of them gratuitous and mutually irrelevant; and that if the current of them did not carry me, somewhat congenially, into a vortex of work and play, I should be condemned for ever to blank watching and to sheer wonder. The very belief

in experience is a suggestion of instinct, not of experience itself. The steadfastness of my nature, doggedly retaining its prejudices and assuming its power, supplies and imposes a routine upon my experience which is far from existing in my direct intuitions, very shifty in their quality (even when signs of the same external object) and much mixed with dream. Even the naturalist has to make up by analogy and presumption (which perhaps he calls induction) the enormous spaces between and beyond his actual observations.

Belief in experience is the beginning of that bold instinctive art, more plastic than the instinct of most animals, by which man has raised himself to his earthly eminence: it opens the gates of nature to him, both within him and without, and enables him to transmute his apprehension, at first merely aesthetic, into mathematical science. This is so great a step that most minds cannot take it. They stumble, and remain entangled in poetry and in gnomic wisdom. Science and reasonable virtue, which plunge their roots in the soil of nature, are to this day only partially welcome or understood. Although they bring freedom in the end, the approach to them seems sacrificial, and many prefer to live in the glamour of intuition, not having the courage to believe in experience.

DEWEY'S NATURALISTIC METAPHYSICS

George Santayana. "Dewey's Naturalistic Metaphysics." *Journal of Philosophy* 22.25 (3 December 1925): 673–688.

Readers of this journal are doubtless studying, or have studied, Professor Dewey's recent book on *Experience and Nature*, certainly the weightiest and most incisive account he has given of his philosophy. In reviewing it, I may therefore be excused from attempting to sum up his chief contentions in his own language, considering especially that his language, as he himself says, is the chief or only obstacle to understanding him. Nor would the fairest paraphrase of his conclusions do him justice. Without the many pointed allusions and incidental insights that humanize his pages, without his constant appeals to the economy of the working mind, many of his positions would remain paradoxes, and it would be impossible to discover the scrupulous fidelity to facts, seen at a certain angle, which dictates his words, even when they seem most unintelligible. Here is a remarkable rereading of things with a new and difficult kind of sincerity, a near-sighted sincerity comparable in philosophy to that of contemporary painters in their painful studies. The intellect here, like the fancy there, arrests its dogmatic vision and stops short at some relational term which was invisible because it is only a vehicle in natural seeing. No wonder that these near elements, abstracted and focused in themselves, have a queer look. For my part, I am entirely persuaded of the genuineness and depth of Dewey's views, within the limits of his method and taken as he means them. He is, fortunately, not without an active band of followers who will be able to interpret and elaborate them in his own spirit. I am hardly in their case, and all I can hope to accomplish is to fix the place and character of this doctrine in relation to the points of view which I instinctively take or which seem to me, on reflection, to be most comprehensive. And I will append such conclusions as I may provisionally reach on this subject to a phrase by which Dewey himself characterizes his system: *Naturalistic Metaphysics*. In what sense is this system naturalistic? In what sense is it metaphysical? How comes it that these two characters (which to me seem contradictory) can be united in this philosophy?

Naturalism is a primary system, or rather it is not a special system at all, but the spontaneous and inevitable body of beliefs involved in animal life, beliefs of which the various philosophical systems are either extensions (a supernatural environment, itself natural in its own way, being added to

nature) or interpretations (as in Aristotle and Spinoza) or denials (as in idealism). Children are interested in their bodies, with which they identify themselves; they are interested in animals, adequate playmates for them, to be bullied with a pleasing risk and a touch of wonder. They are interested later in mechanical contrivances and in physical feats and adventures. This boyish universe is indefinitely extensible on its own plane; it may have heaven around it and fairyland in its interstices; it covers the whole field of possible material action to its uttermost reaches. It is the world of naturalism. On this material framework it is easy to hang all the immaterial objects, such as words, feelings, and ideas, which may be eventually distinguished in human experience. We are not compelled in naturalism, or even in materialism, to ignore immaterial things; the point is that any immaterial things which are recognized shall be regarded as names, aspects, functions, or concomitant products of those physical things among which action goes on. A naturalist may distinguish his own person or self, provided he identifies himself with his body and does not assign to his soul any fortunes, powers, or actions save those of which his body is the seat and organ. He may recognize other spirits, human, animal, or divine, provided they are all proper to natural organisms figuring in the world of action, and are the natural moral transcript, like his own feelings, of physical life in that region. Naturalism may, accordingly, find room for every sort of psychology, poetry, logic, and theology, if only they are content with their natural places. Naturalism will break down, however, so soon as words, ideas, or spirits are taken to be substantial on their own account, and powers at work prior to the existence of their organs, or independent of them. Now it is precisely such disembodied powers and immaterial functions prior to matter that are called metaphysical. Transcendentalism is not metaphysical if it remains a mere method, because then it might express the natural fact that any animal mind is its own center and must awake in order to know anything: it becomes metaphysical when this mind is said to be absolute, single, and without material conditions. To admit anything metaphysical in this sense is evidently to abandon naturalism.

It would be hard to find a philosopher in whom naturalism, so conceived, was more inveterate than in Dewey. He is very severe against the imagination, and even the intellect, of mankind for having created figments which usurp the place and authority of the mundane sphere in which daily action goes on. The typical philosopher's fallacy, in his eyes, has been the habit of hypostatizing the conclusions to which reflection may lead, and depicting them to be prior realities – the fallacy of dogmatism. These conclusions are in reality nothing but suggestions or, as Dewey calls them, "meanings" surrounding the passing experience in which, at some juncture, a person is immersed. They may be excellent in an instrumental capacity, if by their help instinctive action can be enlarged or adjusted more accurately to absent facts; but it would be sheer idolatry to regard them as realities or powers deeper than

obvious objects, producing these objects and afterwards somehow revealing themselves, just as they are, to the thoughts of metaphysicians. Here is a rude blow dealt at dogma of every sort: God, matter, Platonic ideas, active spirits, and creative logics all seem to totter on their thrones; and if the blow could be effective, the endless battle of metaphysics would have to end for lack of combatants.

Meantime there is another motive that drives Dewey to naturalism: he is the devoted spokesman of the spirit of enterprise, of experiment, of modern industry. To him, rather than to William James, might be applied the saying of the French pragmatist, Georges Sorel, that his philosophy is calculated to justify all the assumptions of American society. William James was a psychologist of the individual, preoccupied with the varieties of the human imagination and with the possible destinies of the spirit in other worlds. He was too spontaneous and rare a person to be a good mirror of any broad general movement; his Americanism, like that of Emerson, was his own and within him, and perhaps more representative of America in the past than in the future. In Dewey, on the contrary, as in current science and ethics there is a pervasive quasi-Hegeian tendency to dissolve the individual into his social functions, as well as everything substantial or actual into something relative or transitional. For him events, situations, and histories hold all facts and all persons in solution. The master-burden of his philosophy, which lends it its national character, is a profound sympathy with the enterprise of life in all lay directions, in its technical and moral complexity, and especially in its American form, where individual initiative, although still demanded and prized, is quickly subjected to overwhelming democratic control. This, if I am not mistaken, is the heart of Dewey's pragmatism, that it is the pragmatism of the people, dumb and instinctive in them, and struggling in him to a labored but radical expression. His pragmatism is not inspired by any wish to supply a new argument to support some old speculative dogma. Nor is he interested, like Nietzsche and Vaihinger, in a heroic pessimism, desperately living as if postulates were true which it knows to be false. He is not interested in speculation at all, balks at it, and would avoid it if he could; his inspiration is sheer fidelity to the task in hand and sympathy with the movement afoot: a deliberate and happy participation in the attitude of the American people, with its omnivorous human interests and its simplicity of purpose.

Now the philosophy by which Americans live, in contrast to the philosophies which they profess, is naturalistic. In profession they may be Fundamentalists, Catholics, or idealists, because American opinion is largely pre-American; but in their hearts and lives they are all pragmatists, and they prove it even by the spirit in which they maintain those other traditional allegiances, not out of rapt speculative sympathy, but because such allegiance seems an insurance against moral dissolution, guaranteeing social cohesion and practical success. Their real philosophy is the philosophy of enterprise.

Now enterprise moves in the infinitely extensible boyish world of feats and discoveries – in the world of naturalism. The practical arts, as Dewey says, assume a mechanical unity and constancy established in the universe. Otherwise discoveries made to-day would not count to-morrow, inventions could not be patented, the best-laid plans might go astray, all work might be wasted, and the methods of experts could not be adjusted more and more accurately to their tasks. This postulated mechanical system must evidently include the hands and brain of the worker, which are intertwined inextricably with the work done. It must also include his mind, if his mind is to be of any practical account and to make any difference in his work. Hence the implicit American philosophy, which it is Dewey's privilege to make explicit, involves behaviorism. This doctrine is new and amazing if taken to deny the existence of thought; but on its positive side, in so far as it puts all efficient processes on one level, it has been an implication of naturalism from time immemorial. For a naturalist nothing can be substantial or efficacious in thought except its organs and instruments, such as brains, training, words, and books. Actual thought, being invisible and imponderable, eludes this sort of chase. It has always been rather ignored by materialists; but it remained for American optimists to turn their scorn of useless thought into a glad denial of its existence. This negative implication of behaviorism follows also from the commonsense view that mind and body act upon each other alternately; for when this view is carried out with empirical rigor, it corrects the speculative confusion which first suggested it. What it called mind turns out never to have been anything but a habit in matter, a way people have of acting, speaking, and writing. The actuality of spirit, mystically momentary, does not fall within the purview of this empirical inventory any more than the realm of truth, invisibly eternal. Men of affairs, who can easily tell a clever man from a fool, are behaviorists by instinct; but they may scout their own conviction when it is proposed to them by philosophers in paradoxical language. The business intellect, by the time it comes to theorizing, is a little tired. It will either trust a first impression, and bluff it out, or else it will allow comfortable traditional assurances in these hazy regions to relieve it of responsibility.

Is Dewey a behaviorist? On the positive side of the theory, he certainly is; and it is only when we interpret what he says about ideas, meanings, knowledge, or truth behavioristically, that the sense and the force of it begin to appear. Often, indeed, he seems to jump the barrier, and to become a behaviorist in the negative sense also, denying the existence of thought: because it would be to deny its existence if we reduced it to its material manifestations. At least at one point, however, the existence of thought in its actuality and spiritual concentration is admitted plainly. Not, indeed, on the ground which to most philosophers would seem obvious and final, namely, that people sometimes do actually feel and think. This consideration might seem to Dewey irrelevant, because actual feeling and thinking are accounted

for initially, on his view, by the absolute existence of the specious or conventional world: they do not need to be introduced again among its details. An impersonal transcendental spectator, though never mentioned, is always assumed; and the spectacle of nature unrolled before him may be, and strictly speaking must be, wholly observable and material. There can not be any actual mind in experience except the experience itself. The consideration which nevertheless leads Dewey to graft something consciously actual and spiritual upon the natural world is of quite another sort. Essentially, I suspect, it flows from his choice of "events" to be his metaphysical elements (of which more presently); incidentally it is attached to the sympathetic study which he has made of Aristotle. Events, he thinks, have natural "endings," "culminations," or "consummations." They are not arbitrary sections made in the flux of nature, as if by geometrical planes passed across the current of a river. They are natural waves, pulsations of being, each of which, without any interruption in its material inheritance and fertility, forms a unit of a higher order. These units (if I may express the matter in my own language) fall sometimes into the realm of truth, when they are simply observable patterns or rhythms, and sometimes into the realm of spirit, as in animal perception or intent, when the complex tensions of bodily or social life generate a single sound, an actual pang, or a vivid idea. Mind at such moments possesses a hypostatic spiritual existence, over and above the whole behaviorist or pragmatic ground-work of mind: it has become conscious, or as Aristotle would say, has reached its second entelechy and become intellect in act. This hypostatic spiritual existence Dewey seems to recognize at least in esthetic contemplation; but evidently every actual feeling or idea, however engrossed in action or however abstractly intellectual, is in the same case. Such an admission, if taken to heart, would have leavened this whole philosophy; but Dewey makes it grudgingly, and hastens to cover it up. For instance, when he comes upon the phrase "Knowledge of acquaintance," a phrase intended to express just such instant innocent immediate perusal of essence, he refuses to understand it as it was meant, and says that acquaintance implies recognition and recognition familiarity; on the ground, I suppose, that people are called "acquaintances" when they bow to one another: and we are left with an uncomfortable suspicion that it is impossible to inspect anything for the first time. In another place we are told that consummations are themselves fruitful and ends are also means. Yes, but in what sense? Of course, no earthly flame is so pure as to leave no ashes, and the highest wave sinks presently into the trough of the sea; but this is true only of the substance engaged, which, having reached a culmination here, continues in its course; and the habit which it then acquired may, within limits, repeat the happy achievement, and propagate, the light. One torch by material contact may kindle another torch; and if the torches are similar and the wind steady, the flames, too, may be similar and even continuous; but if anyone says that the

visible splendor of one moment helps to produce that of another, he does not seem ever to have seen the light. It will therefore be safer to proceed as if the realm of actual spirit had not been broached at this point, and as if the culminations recognized were only runs or nodes discoverable in nature, as in the cycle of reproduction or in sentences in discourse. The behaviorist landscape will then not be split by any spiritual lightning, and naturalism will seem to be established in its most unqualified form. Yet in this case how comes it that Dewey has a metaphysics of his own, that cosmology is absent from his system, and that every natural fact becomes in his hands so strangely unseizable and perplexing?

This question, which is the crux of the whole system, may be answered, I think, in a single phrase: *the dominance of the foreground*. In nature there is no foreground or background, no here, no now, no moral cathedra, no centre so really central as to reduce all other things to mere margins and mere perspectives. A foreground is by definition relative to some chosen point of view, to the station assumed in the midst of nature by some creature tethered by fortune to a particular time and place. If such a foreground becomes dominant in a philosophy naturalism is abandoned. Some local perspective or some casual interest is set up in the place of universal nature or behind it, or before it, so that all the rest of nature is reputed to be intrinsically remote or dubious or merely ideal. This dominance of the foreground has always been the source of metaphysics; and the metaphysics has varied according as the foreground has been occupied by language or fancy or logic or skeptical self-consciousness or religious rapture or moral ambition. Now the dominance of the foreground is in all Dewey's traditions: it is the soul of transcendentalism and also of empiricism; it is the soul of moralist and of that kind of religion which summons the universe to vindicate human notions of justice or to sub serve the interests of mankind or of some special nation or civilization. In America the dominance of the foreground is further emphasized by the prevalent absorption in business life and in home affections, and by a general feeling that anything ancient, foreign, or theoretical can not be of much consequence.[1] Pragmatism may be regarded as a synthesis of all these ways of making the foreground dominant: the most close reefed of philosophical craft, most tightly hugging appearance, use, and relevance to practice today and here, least drawn by the lure of speculative distances. Nor would Dewey, I am sure, or any other pragmatist, ever be a naturalist instinctively

[1] I can imagine the spontaneous pragmatism of some President of a State University, if obliged to defend the study of Sanskrit before a committee of Senators. "You have been told," he would say, "that Sanskrit is a dead language. Not at all: Sanskrit is Professor Smith's Department, and growing. The cost is trifling, and several of our sister universities are making it a fresh requirement for the Ph.D. in classics. That, Gentlemen, is what Sanskrit *is*."

or on the wings of speculative insight, like the old Ionians or the Stoics or Spinoza, or like those many mystics, Indian, Jewish, or Mohammedan, who, heartily despising the foreground, have fallen in love with the greatness of nature and have sunk speechless before the infinite. The pragmatist becomes, or seems to become, a naturalist only by accident. When as in the present age and in America the dominant foreground is monopolized by material activity; because material activity, as we have seen, involves naturalistic assumptions, and have been the teacher and the proof of naturalism since the beginning of time. But elsewhere and at other periods experience is free to offer different perspectives into which the faithful pragmatist will be drawn with equal zeal; and then pragmatic metaphysics would cease to be naturalistic and become, perhaps, theological. Naturalism in Dewey is accordingly an assumption imposed by the character of the prevalent arts; and as he is aware that he is a naturalist only to that extent and on that ground, his naturalism is half-hearted and short-winded. It is the specious kind of naturalism possible also to such idealists as Emerson, Schilling, or any Hegelian of the Left, who may scrupulously limit their survey, in its range of objects, to nature and to recorded history, and yet in their attitude may remain romantic, transcendental, piously receiving as absolute the inspiration dominating moral life in their day and country. The idealists, being self-conscious, regarded this natural scene as a landscape painted by spirit; Dewey, to whom self-consciousness is anathema, regards it as a landscape that paints itself; but it is still something phenomenal, all above board. Immediacy, which was an epistemological category, has become a physical one: natural events are conceived to be compounded of such qualities as appear to human observers, as if the character and emergence of these qualities had nothing to do with the existence, position, and organs of those observers. Nature is accordingly simply experience deployed, thoroughly specious and pictorial in texture. Its parts are not (what they are in practice and for living animal faith) substances presenting accidental appearances. They are appearances integrally woven into a panorama entirely relative to human discourse. Naturalism could not be more romantic: nature here is not a world but a story.

We have seen that the foreground, by its dominance, determines whether the empirical philosopher shall be provisionally a naturalist or shall try being something else. What now, looked at more narrowly, is the character of this foreground? Its name is Experience; but lest we should misunderstand this ambiguous word, it is necessary to keep in mind that in this system experience is impersonal. It is not, as a literary psychologist might suppose, a man's feelings and ideas forming a life-long soliloquy, his impressions of travel in this world. Nor is it, as a biologist might expect, such contact of sensitive animals with their environment as adapts them to it and teaches them to remember it. No: experience is here taken in a transcendental, or rather in a moral, sense, as something romantically absolute and practically coercive.

There exists a social medium, the notorious scene of all happenings and discoveries, the sum of those current adventures in which anybody might participate. Experience is deputed to include everything to which experience might testify: it is the locus of public facts. It is therefore identical with nature, to the extent and in the aspects in which nature is disclosed to man. Death, for instance, should be set down as a fact of experience. This would not be possible if experience were something personal, unless indeed death was only a transition to another life. For so long as a man's sensations and thoughts continue, he is not dead and when dead he has no more thoughts or sensations. But is such actual death, we may ask, the death that Dewey can have in mind? The only death open to experience is the death of others (here is a neat proof of immortality for those who like it); and death, for the pragmatist, simply *is* burial. To suppose that a train of thoughts and feelings going on in a man invisibly might at last come to an end, would be to place the fact of death in a sphere which Dewey does not recognize, namely, in the realm of truth; for it would simply be true that the man's thoughts had ceased, although neither he nor anybody else could find that fact in experience. For other people it would remain a fact assumed and credited, for him it would be a destiny that overtook him. Yet Experience, as Dewey understands it, must include such undiscoverable objects of common belief, and such a real, though unobserved, order of events. The dominant foreground which he calls Experience is accordingly filled and bounded not so much by experience as by convention. It is the social world.

How conventional this foreground is will appear even more clearly if we note the elements which are said to compose it. These are events, histories, situations, affairs. The words "affairs" and "situations," in their intentional vagueness, express very well the ethical nerve of this philosophy; for it is essentially a moral attitude or a lay religion. Life is a practical predicament; both necessity and duty compel us to do something about it, and also to think something about it, so as to know what to do. This is the categorical imperative of existence; and according to the Protestant tradition (diametrically opposed to the Indian) the spirit, in heeding its intrinsic vocation, is not alienated from earthly affairs, but on the contrary pledges itself anew to prosecute them with fidelity. Conscience and nature here exercise their suasion concurrently, since conscience merely repeats the summons to enter a field of responsibility – nature – formed by the deposit of it past labors. The most homely business, like the widest policies, may be thus transfused with a direct metaphysical inspiration; and although Dewey avoids all inflated eloquence on this theme, it is clear that his philosophy of Experience is a transcendental moralism. The other two terms, however, "events" and "histories," point to the flux of matter, although this is still gathered up and subdivided under units of discourse. "Event" is now a favorite word among philosophers who are addressed to the study of nature, but bring with them

an empirical logic; and it well expresses that conjunction. An event does not involve a spectator, and does involve an environment on the same plane as the event: so far events belong directly to the flux of nature. At the same time an event is a change, and all the dialectic of change applies to the conception. Are events the crises between existence characterized in one way and existence characterized in another way? Or are events the intervals between such crises? But if these intervals, each having a somewhat different quality, were taken separately, they would not lodge in a common space or time; there would be no crises between them, no change, and (as I think would appear in the end) they themselves would have no existence. If events are to be successive, and fragments of the flux of nature, they must be changes in an abiding medium. In other words, an event, in its natural being, is a mode of substance, the transit of an essence. Moreover, natural events would have to be microscopic, because intervals containing no internal crisis, however long or even eternal they might seem sentimentally, could not be measured and would count as instants. This corollary is well fitted to remind us that nature laughs at our dialectic and goes on living in her own way. Her flux, like the flow of a river, is far more substantial than volatile, all sleepy continuity, derivation, persistence, and monotony. The most ordinary form of change in her – perhaps the only fundamental form – is motion; and it would be highly artificial to call the parts of a motion events where there are no crises and no intervals. Even night and day, unless we choose a particular point on the earth's surface for our station, are not events, since both are perpetual. It is apparently only on higher levels, genetically secondary, that nature produces events, where movement becomes rhythmical, and a culmination is followed by a breakdown and a repetition, as in animal birth and death. These secondary rhythms naturally attract the attention of a human observer, whose units of perception are all impressionistic and pictorial; he selects events from the vast continuities of nature because they go with rhythms in his own organism, with which his intuitions – the only vital culminations – are conjoined. Hence the empirical impression that nature is a series of events, although if they were mere events they could not be parts of nature, but only essences succeeding one another before vacant attention or in discourse; in other words, we should be in the mock world of psychologism.

The superficial level proper to empirical events becomes even more obvious if instead of calling them events we call them histories. The parts of nature seem events when we ignore their substance and their essence and consider only their position; anything actual is an event only, so to speak, at its margins, where it ceases to be itself. But before the parts of nature can seem to be histories, we must impose on them dramatic unities fetched from a far more derivative sphere. Histories are moral units, framed by tracing the thread of some special interest through the maze of things, units impossible to discriminate before the existence of passions and language. As there is a

literary psychology which represents the mind as a mass of nameable pictures and describable sentiments, so there is a romantic metaphysics which hypostatizes history and puts it in the place of nature. "Histories" bring us back into the moral foreground where we found "situations" and "affairs." The same predicaments of daily life are viewed now in a temporal perspective, rather than as they beset us at any one moment.

That the foreground of human life is necessarily moral and practical (it is so even for artists) and that a philosophy which limits itself to clarifying moral perspectives may be a very great philosophy, has been known to the judicious since the days of Socrates. Why could not Dewey have worked out his shrewd moral and intellectual economy within the frame of naturalism, which he knows is postulated by practice, and so have brought clearness and space into the picture, without interposing any metaphysics? Because it is an axiom with him that nothing but the immediate is real. This axiom, far from being self-evident, is not even clear: for everything is "real" in some sense, and there is much doubt as to what sort of being is immediate. At first the axiom produced psychological idealism, because the proudly discoursing minds of philosophers took for granted that the immediate for each man could be only his own thoughts. Later it has been urged (and, I think, truly) that the immediate is rather any object – whether sensible or intelligible makes no difference – found lying in its own specious medium; so that immediatism is not so much subjective as closely attentive and mystically objective. Be it noted, however, that this admitted objectivity of real things remains internal to the immediate sphere: they must never be supposed to possess an alleged substantial existence beyond experience. This experience is no longer subjective, but it is still transcendental, absolute, and groundless; indeed it has ceased to seem subjective only because it seems unconditioned; and in order to get to the bottom and to the substance of anything, we must still ask with Emerson, What is this *to me*, or with William James, What is this *experienced as*. As Dewey puts it, these facts of experience simply *are* or *are had*, and there is nothing more to say about them. Such evidence flooding immediate experience I just now called mystical, using the epithet advisedly; because in this direct possession of being there is no division of subject and object, but rapt identification of some term, intuition of some essence. Such is sheer pleasure or pain, when no source or object is assigned to it; such is esthetic contemplation; such is pure thinking, the flash of intellectual light. This mystical paradise is indefinitely extensible, like life, and far be it from me to speak evil of it; it is there only that the innocent spirit is at home. But how should pragmatism, which is nothing if not prehensile, take root in this Eden? I am afraid pragmatism is the serpent; for there is a forbidden tree in the midst, the tree of Belief in the Eventual, the fruit of which is Care; and it is evident that our first parents must have partaken of it copiously; perhaps they fed on nothing else. Now when immediate experience is crossed by Care

it suffers the most terrible illusion, for it supposes that the eventual about which it is troubled is controllable by the immediate, as by wishes, omens, or high thoughts; in other words, that the essences given in the immediate exist, generate their own presence, and may persist and rearrange themselves and so generate the future. But this is sheer superstition and trust in magic; the philosophy not of experience but of inexperience. The immediate, whether paradise or a hell, is always specious; it is peopled by specters which, if taken for existing and working things, are illusions; and although they are real enough, in that they have definite character and actual presence, as a dream or a pain has, their reality ends there; they arc unsubstantial, volatile, leaving no ashes, and their existence, even when they appear, is imputed to them by a hidden agency, the demon of Care, and lies wholly in being perceived. Thus immediate experience of things, far from being fundamental in nature, is only the dream which accompanies our action, as the other dreams accompany our sleep; and every naturalist knows that this waking dream is dependent for its existence, quality, intensity, and duration on obscure processes in the living body, in its interplay with its environment; processes which go back, through seeds, to the first beginnings of life on earth. Immediate experience is a consummation; and this not in esthetic contemplation alone, but just as much in birth-pangs or the excitement of battle. All its episodes, intermittent and wildly modulated, like the sound of wind in a forest, are bound together and rendered relevant to one another only by their material causes and instruments. So tenuous is immediate experience that the behaviorist can ignore it altogether, without inconvenience, substituting everywhere objects of conventional belief in their infinite material plane. The immediate is, indeed, recognized and prized only by mystics, and Dewey himself is assured of possessing it only by virtue of his social and ethical mysticism, by which the whole complex theater of contemporary action seems to him to be given immediately: whereas to others of us (who are perhaps mystical at other points) this world of practice seems foreign, absent from our better moments; approachable even at the time of action only by animal faith and blind presumption, and compacted, when we consider its normal texture, out of human conventions, many of them variable and foolish. A pragmatist who was not an ethical or social mystic, might explore that world scientifically, as a physician, politician, or engineer, and remain throughout a pure behaviorist or materialist, without noticing immediate experience at all, or once distinguishing what was given from what was assumed or asserted. But to the mystic, if he is interested in that world, it all comes forward into the immediate; it becomes indubitable, but at the same time vague; actual experience sucks in the world in which conventional experience, if left to dogmatize, would have supposed it was going on; and a luminous cloud of immediacy envelops everything and arrests the eye, in every direction, on a painted perspective; for if any object becomes immediate, whatever it may be,

it becomes visionary. That same spiritual actuality which Dewey, in passing, scarcely recognized at the top of animal life, he now comes upon from within, and without observing its natural locus, lays at the basis of the universe. The universe, in his system, thereby appears inverted, the accidental order of discovery being everywhere substituted for the natural order of genesis; and this with grave consequences, since it is not so easy for the universe as for an individual to stand on its head.[2]

Consider, for instance, the empirical status of the past. The only past that ever *is* or *is had* is a specious past, the fading survival of it in the present. Now the form which things wear in the foreground, according to this philosophy, is their *real* form; and the meaning which such immediate facts may assume hangs on their use in executing some living purpose. What follows in regard to past time? That the survival or memory of it comprises all its reality, and that all the meaning of it lies in its possible relevance to actual interests. A memory may serve as a model or condition in shaping some further enterprise, or may be identified with a habit acquired by training, as when we have learned a foreign language and are ready to speak it. Past experience is accordingly real only by virtue of its vital inclusion in some present undertaking, and yesterday is *really* but a term perhaps useful in the preparation of tomorrow. The past, too, must work if it would live, and we may speak without irony of "the futurity of yesterday" in so far as yesterday has any pragmatic reality.

This result is consistent with the general principle of empirical criticism by which we are forbidden to regard God, truth, or the material cosmos as anything but home vistas. When this principle is applied to such overwhelming outer realities, it lightens the burden of those who hate external compulsions or supports; they can henceforth believe they are living in a moral universe that changes as they change, with no sky lowering over them save a portable canopy which they carry with them on their travels. But now this

[2] A curious reversal of the terms "natural" and "ideal" comes about as we assume that the immediate is substantial or that it is visionary. Suppose I say that "everything ideal emanates from something natural." Dewey agrees, understanding that everything remote emanates from something immediate. But what I meant was that everything immediate – sensation, for instance, or love – emanates from something biological. Not, however, (and this is another verbal snare) from the concepts of biological science, essences immediately present to the thoughts of biologists, but from the largely unknown or humanly unknowable process of animal life. I suppose we should not call some of our ideas scientific if they did not trace the movement of nature more accurately and reliably than do our random sensations or dramatic myths; they are therefore presumably truer in regard to those distributive aspects of nature which they select. But science is a part of human discourse, and necessarily poetical, like language. If literal truth were necessary (which is not the case in practice in respect to nature) it would be found only, perhaps, in literature – in the reproduction of discourse by discourse.

pleasant principle threatens the march of experience itself: for if my ancestors have no past existence save by working in me now, what becomes of my present being, if ever I cease to work in my descendants? Does experience today draw its whole existence from their future memories? Evidently this can not be the doctrine proposed; and yet if it be once admitted that all the events in time are equally real and equally central, then at every point there is a by-gone past, intrinsically perfectly substantial and self-existent; a past which such memories or continuations as may be integral to life at this later moment need continue only very partially, or need recover only schematically, if at all. In that case, if I ever find it convenient to forget my ancestors, or if my descendants find it advantageous to forget me, this fact might somewhat dash their vanity or mine if we should hear of it, but can not touch our substantial existence or the truth of our lives. Grant this, and at once the whole universe is on its feet again; and all that strange pragmatic reduction of yesterday to tomorrow, of Sanskrit to the study of Sanskrit, of truth to the value of discovering some truth, and of matter to some human notion of matter, turns out to have been a needless equivocation, by which the perspectives of life, avowedly relative, have been treated as absolute, and the dominance of the foreground has been turned from a biological accident into a metaphysical principle. And this quite wantonly: because practice, far from suggesting such a reduction, precludes it, and requires every honest workman to admit the democratic equality of the past and the future with the present, and to regard the inner processes of matter with respect and not with transcendental arrogance. The living convictions of the pragmatist himself are those involved in action, and therefore naturalistic in the dogmatic sense; action involves belief, belief judgment, and judgment dogma; so that the transcendental metaphysics and the practical naturalism of the pragmatist are in sharp contradiction, both in logic and in spirit. The one expresses his speculative egotism, the other his animal faith.

Of course, it is neither Dewey nor the pragmatic school that is to blame for this equivocation; it is a general heirloom, and has infected all that criticism of scholastic dogma on which modern philosophy is founded. By expressing this critical principle more thoroughly, the pragmatists have hoped to clear the air, and perhaps ultimately may help to do so. Although I am myself a dogmatic naturalist, I think that the station assumed by Dewey, like the transcendental station generally, is always legitimate. Just as the spirit has a right to soliloquize, and to regard existence as a strange dream, so any society or nation or living interest has a right to treat the world as its field of action, and to recast the human mind, as far as possible, so as to adapt it exclusively to that public function. That is what all great religions have tried to do, and what Sparta and Carthage would have done if they had produced philosophers. Why should not America attempt it? Reason is free to change its logic, as language to change its grammar; and the critic of the life of reason

may then distinguish, as far as his penetration goes, how much in any such logic or grammar is expressive of material circumstances, how much is exuberant rhetoric, how much local, and how much human. Of course, at every step such criticism rests on naturalistic dogmas; we could not understand any phase of human imagination, or even discover it, unless we found it growing in the common world of geography and commerce. In this world fiction arises, and to this world it refers. In so far as criticism can trace back the most fantastic ideas – mythology, for instance – to their natural origin, it should enlighten our sympathies, since we should all have lived in the society of those images, if we had had the same surroundings and passions; and if in their turn the ideas prevalent in our own day can be traced back to the material conditions that bred them, our judgment should be enlightened also. Controversy, when naturalism is granted, can yield to interpretation, reconciling the critical mind to convention, justifying moral diversity, and carrying the sap of life to every top-most intellectual flower. All positive transcendental insights, whether empirical, national, or moral, can thus be honored (and disinfected) by the baldest naturalism, remaining itself international, Bohemian, and animal. The luminous fog of immediacy has a place in nature; it is a meteorological and optical effect, and often a blessing. But why should immediacy be thought to be absolute or a criterion of reality? The great error of dogmatists, in hypostatizing their conclusions into alleged preexistent facts, did not lie in believing that facts of some kind preexisted; the error lay only in framing an inadequate view of those facts and regarding it as adequate. God and matter are not any or all the definitions which philosophers may give of them: they are the realities confronted in action, the mysterious but momentous background, which philosophers and other men mean to describe by their definitions or myths or sensible images. To hypostatize these human symbols, and identify them with matter or with God, is idolatry: but the remedy for idolatry is not iconoclasm, because the senses, too, or the heart or the pragmatic intellect, can breed only symbols. The remedy is rather to employ the symbols pragmatically, with detachment and humor, trusting in the steady dispensations of the substance beyond.

ADVENTITIOUS ASPECTS OF ESSENCE

George Santayana. "Adventitious Aspects of Essence." *The Realm of Essence* (New York: Charles Scribner's Sons, 1927), chap. 3, pp. 26–44.

The realm of essence, like the empyrean, is a clear and tranquil region when you once reach it; but for the observer from the earth clouds may intervene, or his eye may be arrested at some nearer sphere which, just because it has some opaqueness, he may think the true blue. Instead of conceiving essences he may conceive possible beings, problematical facts, and forms of things, abstractions, thoughts, sensations, or natural elements. Of course such intermediate objects, however they be defined, will exhibit some essence, since some essence cannot help appearing in any chosen thing whatsoever; but in the categories just mentioned there is some ambiguity, some reference to contingent existence, which limits their scope, and renders them altogether confusing, if taken as synonyms for essential being.

The word "possible" is slippery and treacherous. It is commonly applied to anything that the speaker can readily imagine, especially when he is ignorant whether it is a fact or not. In this sense the whole future, and much of the past, is called possible when imaginable. But in another sense the whole past and future, even when unimaginable, must have been possible too. The materially possible threatens to coincide with the actual course of nature: and then the term possible begins to mean the materially impossible, provided it is imaginable. The imagination, however, is itself something existent, and extremely elastic: a little shake, or a new stimulus, will cause it to conceive many new possibilities. Can these have been impossibilities before? Perhaps we may take refuge in the notion that everything is possible except what is self-contradictory: in other words, things are not possible merely because they are actual, or merely because they are imagined, but if they are such as not to preclude being imagined. But how should anything preclude being imagined, if an imagination arose capable of imagining it? The meaning can only be that my own imagination, in some particular instance, has got into a tangle, and that in speaking of the round square or of the son of a barren woman I have lost the meaning of my terms; and what I call an impossibility is only the suspense of my thought between two possibilities. Nothing contradicts itself, not even this state of confusion in my thinking. It is a perfectly possible muddle. This process of fluctuating from one object to another has a character easily recognizable; its essence, like every essence, is individual and

(since it may reappear) is universal. Contradiction is a vice into which discourse may fall when it blurs the inherent distinctness of different essences. Determination, individuality, variety infinitely precise and indelible (degrees of articulation being themselves all equally distinct) is the very being of essence. Howsoever monistic physics may choose to be, the realm of essence is the home of eternal and irreducible plurality.

The terms "possible" and "impossible" have, then, no proper application in the realm of essence; even to facts in nature they are applicable only in view of human ignorance or imagination. Their true field is that of discourse, where the intent to consider one essence binds the mind to fidelity and consistency, and excludes the substitution of another essence under the same name – excludes it, I mean, if the intent is maintained to express the essence originally chosen. Hence the extension of the "possible" and the "impossible" to natural facts, in so far as their names or relations are assumed to prejudge their character: in a given world, describable by a given essence, anything contrary to that essence is impossible. In the actual universe, its essence being completely determined by the events which compose it, all that is actual is necessary and all else is impossible. But this of course does not preclude the possibility of any different world; and so long as the complete essence of the actual universe is unknown to us, we may give its name to almost any extensions or transformations of the part which we presume to know: so that the known world will be free to become, or to have been, almost anything.

The contingency of existence, though intrinsic to it, and the hypothetical nature of all reasoning about it, are a trial to logicians: they would like their art to rule *a priori*. Many of them, in their eagerness to make logic dominant, betray it, by reducing it to a description of what they presume to be the natural movement of thought or of history: but there are some too devoted and clear-headed for such a subterfuge, who nevertheless wish to chain existence to their chariot. How do so? I know only of one way: to assert that the whole realm of essence is realized in existence. The existence of infinity of worlds irrelevant to ours, and utterly undiscoverable by us, cannot be precluded by our ignorance of them: the supposition is merely idle. But another consequence involved in this hypothesis is positively repugnant to common sense; and this is, that an infinity of worlds almost identical with ours, but differing from it in some detail, must exist too. An infinite number of solar systems, for instance, must have begun as ours began, but each of them must have deviated at one point from ours in its evolution, all the previous incidents being followed, in each case, by a different sequel. The interest in natural derivation which animates the observant and artful mind is thus outraged by the demand for logical completeness in things: and there can be little doubt to which side the sense for fact, which alone can judge of facts, will incline the naturalist.

By a somewhat different opposition to accidental facts, essence might be called "the imaginary." This designation is popular and poetically very

appropriate, since the realm of essence is unsubstantial, remote from existence, and infinitely more extensive. In broaching it we escape the limitations of fortune, as the poet does in his fictions; and yet the objects that greet us there may be more definite, memorable, and beautiful than the sordid facts, which we live among without feeling for them, perhaps, any intellectual affinity. But the danger in calling essence imaginary is that, like poetry, we should identify it with the imagined. The imagined is indeed unsubstantial, but it is selected, insecure, and dependent for its specious actuality on the vapors of some animal psyche The imagined is not, as essence is, a field from which all facts must gather their temporary forms; it is only a replica or variant of some of these facts – namely, of human sensations – richer perhaps in spots than material reality, but on the whole far thinner and less extensive. Images drifting through idle heads are in their psychological dimension a part of the actual, since the intuition of those imaginary objects occurs at definite times and places. The imaginary, if it is to mean essence, is the infinite fairy-land of which such dreams are glimpses. The moral connotation of the word imaginary is also ambiguous. Actual images, being generated in the living psyche, may be very apposite fulfillments to her previous experience or to her instinctive needs, and therefore very beautiful; and actual dreams, even if for the most part silly and fatiguing, are sometimes pleasant and even prophetic. Nothing of the sort can be said of the imaginary as a whole, conceived as the realm of essence. Not being selected or produced by any living soul, but inert, infinite, and latent, it contains an appalling multitude of vain and ugly themes, as well as the few which are relevant to human interests and fit for human contemplation.

If free imagination presents stray essences to the mind, attentive perception presents others, to which studious people give greater importance. The flux of nature could not be a flux, nor at all perceptible, unless it was a flux through essences, that is, through forms of being differing from one another. It is as the forms things wear to the senses or to the practiced intellect that essences are first noticed; in this capacity, or as definitions of current terms, they appear in the Socratic school. Geometrical figures, fixed by intent, are certainly essences; so too are any types of animal bodies or human institutions which may be arrested in thought: but so also are all the qualities of sensation despised by Platonism and all the types of change or relation neglected by that philosophy. This neglect was ominous, because if essences had been studied for their own sake they would have been found everywhere, as they are by the poet or the mathematician. To discern them only in natural or moral units, and to think of them as perfections towards which things aspire, is not merely to omit noticing them elsewhere but to regard them as natural magnets, as a background of metaphysical powers, more selective than nature itself, and constituting a world of substances behind the flux of appearance. Physics and theology may appeal to such patron substances if they think fit;

but in the theory of essence they have no place whatever. Essences are not substances containing a matter that can assume a different essence: they cannot be the material source of anything. Nor have they any relevance to particular places and times, so that one might be conceived to preside over one part of nature, and another over another. The essence of a bridge cannot build bridges or breed them; and when a bridge falls and the matter of it becomes a heap of stones, the essence of that bridge is not a surviving ghost haunting the spot, and seeking to restore the structure. A material bridge-builder must return to the work: and the resulting form will hardly repeat exactly the one that has disappeared; nor will that discarded essence fight against reform, or in any way complain or avenge itself, if presently bridge-builders come no more to the spot, and the placid stream flows on unspanned, reflecting no shadow of any human contrivance. So it is also, in spite of superstition, with the essences of living beings, which reproduce themselves for generations with little change of type. Their conservation is physical and an elaborate instance of rhythm and habit in matter. Here too a material seed must transmit the substance that is to run through the ancestral cycle and embody that familiar essence: let the seed fail, or circumstances modify it, and at once that prescribed form is forsaken and forgotten, relegated to the realm of essence and reduced to the same impotence, or left in the same peace, as all its sister essences that time has never brought to existence.

The most stubborn misunderstanding of essence arises, however, from thinking and calling it an abstraction. In a popular sense the epithet is natural and harmless: it means only that essence is immaterial. So mathematics is called an abstract science and music an abstract art; they do not describe particular parts of the material world or particular historical events; they may therefore seem unreal and superfluous to the man in the street. But the mathematician or the musician will hardly call them *abstract*, since his apprehension of them is direct and his interest in them primary. No doubt the material world, especially in his own person and life, supplies a suggestion and an organ for those intuitions; but their object is so far from being drawn out of existing things that it never exists in them in its ideal perfection, and the study of it requires a special imaginative faculty, a profound application, and a great exactitude. It is the very complexity and precise definition of this realm – its essential concreteness – that renders it difficult and vague to the gross mind: and it is called abstract not because it is drawn from existence but because it is not found there.

It is an accident to essence to be manifested; but not to be manifested is also an accident; it means simply that matter or intellect happen never to have traversed that form. A different plasticity in existence might make any essence an appearance; and evidently in a given appearance there can be nothing abstract – nothing verbal, unrealizable, or cognitively secondary. Each appearance (and therefore every essence, since it might well appear) is an

obvious and complete being; and if essences when simple are indefinable, that fact only proves that they are the original elements of any description. Far from being creatures of language, they suffer from not being commonly named, since names are hurriedly clapped on things and persons, however ill perceived, which move as material units; whereas the most evident features in immediate experience receive no separate names, until perhaps some logician, poet, or madman grows conscious of their perpetual presence, and borrows some title for them from the vocabulary of physics; as I have borrowed this term "essence," once used by chemists for their drugs, in order to designate every specious object actually present to intuition. Language is responsible, not for these objects, but for the prejudice against them. An essence, if un-named, is thought to be imperfect and but half real. An unchristened child has to be called So-and-So's baby, and a stranger in the street has to be pointed at dumbly; yet it would be too egotistical even for human nature to assert that the waif or the stranger possessed no being of his own, but was essentially an abstraction from our social circle, because he could be described in our language only relatively and peripherally. It is not otherwise with the immediate, radical, nameless phantoms of feeling and intuition. They are just the appearances they are, exactly determinate and perfect at each moment, and different in some precise way from whatever else may be felt before or after or by other people; and the necessary defects, or rather the proper summary function, of language or reflection, must not be charged against those primary appearances as a defect of essence.

When a term is felt to be disparaging, as the term abstract has become for some writers, it can easily be passed on from one bad thing to another. Instead of designating defect of form abstractness may designate defect of quantity. In an etymological sense any part of a thing, like the skin of an apple when peeled off, might be called an abstraction from the whole, especially when the part abstracted happens not to have existed separately in the beginning, as do the bricks of a house, but to have grown up together with the whole, and been first found there. Hence a well-known doctrine that only the Absolute is concrete and that every particular fact or observation is an abstraction. In this sense of the word, every essence would be an abstraction from the realm of essence, but no essence, much less the realm of essence in its entirety, would be an abstraction from existing things: on the contrary, existing things would be abstractions from their essences, which in the realm of essence possess much richer essential relations than those which in existing instances are abstracted and realized materially. The rind of the apple, peeled and curling casually on a plate, would be a miserable abstraction from all the spirals and all the patterns implied in its geometrical essence and in its pictorial aspect.

Abstraction, however, in the proper sense of the word, is possible only for a mind: things and essences, whatever may be their unions or separations, are

never in their own being abstractions from anything else. A term can be abstract only relatively: how should anything be abstract in itself? None of the constituents of a thing or of an essence is an abstraction from it; each is a thing or an essence in its own right. To find abstractions we must enter the psychological sphere and consider the casual history of human ideas. A late idea, though its object may be perfectly concrete and definite, like the sphere, may be simple in comparison with some early impression – say, that of an apple – which may have first suggested it: and if the variegated essence was really distinguished first (which is not always the case) and the simple one – roundness – was only noticed afterwards as an element included in the other, then, for that person the sphere will be something abstract, not indeed in its essence, but in its mode of reaching manifestation: an act of abstraction happens first to have revealed this essence to this man. But such an approach is accidental: a true psychologist would often record that in looking at some roundish thing he first noticed and intuited nothing but roundness, perfect, Platonic, and unadulterated. The clumsiest spheroid cannot convey to an innocent mind any idea save that of a simple sphere; and our first impression of a world in which everything is crooked is that everything is straight. The enormity of our childish idealism would prove immediately fatal if we needed to have a true idea of things in order to act properly in their presence. But ideas which are ridiculous as descriptions may be adequate as signals: all animals eat and breed without any notion of caloric or eugenics: hunger and love are moral overtones quite sufficient to express for them their share in the rude economy of nature. The mind is not a fifth wheel to her coach, but her observations on the journey. Conventional psychology is misled by a primitive gnostic theory to the effect that things ought normally to appear to sense in their full and exact nature. Nothing could be further from the fact, or more incongruous with animal life and sensibility. That which appears to sense is determined at each moment by the liveliness and direction of the psyche in her current reactions. Things are thereby "known" in the sense that they are named and distinguished by their rough aspect and occasions; they are not known at all in the sense of being disclosed in their inner nature, either totally or partially. The specious essence intuited is the *name* given by the psyche to the material force encountered or exerted; it is a spontaneous symbol, not abstract even in its origin; as the word cat is not drawn out of the domestic animal, yet serves to designate it in its entirety, and is much simpler.

Repetition is impossible in the realm of essence; two essences, if not different, will be one essence; if different they will be two essences, and not repetitions of the same essence. Repetition is possible only among objects which are particular but not individual; that is, when they exist and are distinguished by their external relations, even if internally they should happen to be precisely similar, and should have but one individuality or essence. An

individual may change his relations and have different moments and places of existence, so that here he may be surrounded by one environment and there by another. This possibility of iterating or repeating an essence is what, from the point of view of existence, makes essences seem abstract or general, when in reality they are the only individuals. An essence is not the thing which it defines, and may define many things numerically distinct: what is ordinarily called one thing or one person has many separable moments of existence, between any two of which it may perish: they will be moments of one thing or one person only in so far as one individual essence pervades those moments. As nothing can be abstract in itself, so nothing can be general in it. Every essence is universal not because there are repeated manifestations of it (for there need be no manifestations at all) but because it is individuated internally by its character, not externally by its position in the flux of nature: and no essence is general for the same reason. However it may be related to particular existences, its own nature is complete and intrinsic; whereas a term can be said to be general only if it happens to be predicable of a number of scattered things, none of which, perhaps, it defines intrinsically. Yet everything that is at all must be something intrinsically: had a term no individual essence there would be no meaning in predicating it, and it could not be predicated of two things in the same sense, since it would have no sense. Before essences can be called – occasionally and in relation to natural things – either abstract or general, it is requisite that in themselves they should be concrete and individual.

The organ of intuition is an animal psyche, governed by the laws of material life, in other words, by habit: so that it is normal for intuitions to be recurrent, in so far as circumstances allow. Discourse, in which intuitions subserve intent, requires intended essences to recur identically, and imputes identity to them even when they are different, if their difference is irrelevant to the cogency of discourse, and incompatible with it. It is these intended essences, identical for intent on various occasions, but never actually intuited, that might well be called abstractions: they are like points of the compass, or limits of unending approaches, ideal in the sense of being never realized, although clearly indicated and definable by their relation to other terms which are actually given. The identity of an essence with itself is absolute and constitutional, but the identity of the essence given in one intuition with that given in another is an identity assumed and always unverifiable. It is impossible to arrest the two intuitions and compare their objects: to do this would be to supersede both by a third in which perhaps twin objects were presented: but it would remain an assumption that one twin repeated the datum of one intuition, and the other twin the datum of the other. Yet the impetuosity of life, which discourse cannot help sharing, brushes aside these scruples: habit – iteration of words, gestures, and sentiments – sufficiently identifies the essence meant at one moment with that meant at another, in contempt of the

varying context in which they may appear. This essence, not the context, is probably the only object distinctly noticed, or designated expressly. Thus the essence of straightness is continually intuited afresh, and is absolutely identical at each recurrence. It is irrelevant that the material object evoking this essence may be different in each instance, and never quite straight: that context, even if vaguely pressing on the psyche, remains unsynthesized, unnoticed, and unintended. When on looking at a palm tree, a Roman road, or the horizon, I say to myself, how straight! I have exactly the same clear feeling: and this pure essence, not its irrelevant context, is what actually fills my mind, and is the essence apprehended. All the concomitant stuff, if it were noticed in turn, would merely supply other essences of the same universality. It is impossible that anything should appear which is not universal: for it is definite and might evidently appear again. Hence the possibility of discourse: its terms are coined into fixed values, and can pass from mind to mind, retaining their original meaning.

But mind is not a subject congenial to psychologists: they would like it either to reproduce material facts or to take its place among them, or even to swallow them up and be another name for them. Since the edges of material things are known to be broken and warped in fact, it is presumed that we must actually see all lines curved or broken. But mind is intrinsically and initially mind: it is poetical and Platonic from the beginning; and it is only by a painful eventual reinspection that it can correct its first impressions and allow that material things have in fact forms too complicated for the eye to trace, and a substance too remote in its pregnant texture from the scale of sense to be easily imagined, or to be imaginable by man at all. All this subterranean obscurity, however, is in its place: a wise man will not repine at it. Where clearness belongs, clearness enough may be found: the essences actually defined by attention are plain, brilliant, and homely, like the words of the vernacular. The psyche, a plodding beast, needs but to fall into her old paces for the old visions to reappear. It is essences, not things, that are on the human scale – not all essences, of course, but those which the mind evokes spontaneously: whereas things, if humanized at all, can be humanized only by a long architectural labor – a labor which their insidious lapse very soon defeats and annuls.

That essences, though universals, are individual and are given bodily in intuition, may be better understood if we consider those existing things which are supposed to be concrete in contrast to essences. Their existence, we shall find, depends on their external relations, on their inclusion in the flux of nature; and science, in proportion as it penetrates to their dynamic structure and movement, becomes more and more mathematical, that is, operates with categories and terms more and more remote from pictorial physics. It is only when some portion of this inconceivably rapid and complicated flux of matter becomes recognizable and traceable in some respect that a

somewhat concrete thing can be found to exist. In other words, the concreteness of things is borrowed from the presence in them of some essence supposed to be abstract. Only when the flux, by its concentrations and sustained rhythms, manifests for a while locally some recognizable identity of form, can we speak of a concretion in existence, that is, of a thing. Abandon that essence, and that thing has dissolved. Certainly this essence, if it is to qualify existence, must be manifested or embodied in some nexus of events, amid variable external relations; but the flux of events itself would be the most empty of unrealities if it still pretended to flow after having obliterated within itself all distinctions of quality, direction, or phase – that is, all self-identical essences. Essences are definite and thinkable: existence is indefinite and only endured. That is the Platonic experience which I cannot help repeating and confirming at every turn; only that by "thinkable" we must not understand definable in words, but open to intuition in the terms of any sense or of any logic. The flux flows by flowing through essences; and essences are manifested as the flux of matter or of attention picks them up and drops them.

An essence, then, is no abstraction, no unrealizable generality, but any actual aspect which anything can wear, determining its nature, or revealing it to an attentive mind. The sweetness I may taste is not dependent in the order of knowledge or of being upon abstraction from anything else. In my experience it is very likely the first indication I have of any substance called sugar existing near me, to be appropriated or investigated further. When I have gathered all I can learn about sugar, the sweetness originally tasted cannot become an abstraction from this much more remote and hypothetical object. It remains a self-sufficient essence, perhaps the only one given at the moment; but its appearance has now become, for my discursive thinking and belief, a symptom of certain chemical facts in the posited material world which I believe myself to inhabit.

Objects, whether essences or facts, may be considered recurrently, on separate occasions and by separate minds: otherwise discourse and experience could have no sanity, and could accumulate knowledge on no subject. On each occasion, however, the intuition, sensation, or thought turned upon that object is a fresh event, not only numerically but almost certainly by virtue of variations in its quality, context, and mental fringe; so that the living feeling or experience of the moment is something in flux, unseizable, not recoverable, and never, even when it existed, brought under the unity of apperception. Experience is something that just because it exists (without rising to the actuality of spirit) never exists all at once as a unit but only by virtue of its parts, its movement, and its stress. Its parts exist, as it does itself, by occurring in a system of changes and conjunctions never given in such fleeting intuitions as it may include, and probably never given in intuition at all, even in the most accurate retrospect; because these moving clouds of sensibility and intent – the waking dreams of the psyche – are not objects which human attention is

fitted or required to apprehend; they are complexes of no stability or importance as units; nothing matters in them save the objects discerned by them, or discerned by us afterwards as the goals of their movement. In discerning any of these objects, whether they be essences or things, animal life becomes intuition, the synthesis of attention by which an essence appears; but this intellectual act is wholly focussed on its object and unified only there. Taken as tension or potential perception, sensibility is diffused through indefinite time and through many vital functions; it would never exist actually and become a sensation unless it became the sensation of something; the intuition of some essence, like a pain or a sound.

An essence is, then, not at all a mental state, a sensation, perception, or living thought; it is not an "idea," as this word is understood in British philosophy. It is an "idea" only in the Platonic or graphic sense of being a theme open to consideration. Mental facts are not units either in nature or in logic; they are subdivisions made by literary psychologists in the flux of experience considered romantically, as a biography abstracted from its organs and from its natural setting. The dream of life exists: it is going on perpetually in each of us; but its parts, called feelings and thoughts, are individuated only by the essences they discern, which are not the essences of those feelings or thoughts taken existentially, as moments in a dream, but are the essences of anything and everything under heaven or over it. If I think of God, the essence before me, my passing notion of the divine nature, individuates that thought of mine, and makes it possible for discourse afterwards to attribute it to me; but my thought was not God as it conceived God; it was a wretched mixture of words, memories, and dialectical groupings in my heated brain. So far is an existing idea from being the essence which it conceives.

If a romantic psychologist ever succeeded in reconstructing a moment of mental life exactly as it existed, he would be reconstructing (in the fresh setting of his own thoughts) an event itself perfectly particular and never destined to recur. But evidently, since his reconstruction is accurate, the essence given in that past moment is given again to him now; and it must recur in so far as any historian afterwards conceives that experience truly. The repetition of events is impossible; the recovery of essences is easy. Many a dead man, for instance, has considered the dyad in the form of twins, two shillings, or the numeral 2; and twins, two shillings, and the numeral 2 are still found in the world. This dyad, though I give it a learned name, is, indeed, the burden of a primitive intuition. The cat has it when she misses one of her two kittens, and the foreigner conveys it by holding up two fingers: it is not the fingers or the absent kitten that then absorb attention, but the instantly felt difference between one and two. In the midst of various vague and unsteady fields of experience quick intuition continually recovers this important primary essence. Hugging it, the mind can fly from world to world, and can make something definite and concrete out of their chaos, in so far as the dyad finds application there.

Animals live huddled among things and necessarily watchful of them, except in those hours of stolid composure in which they seem to be contemptuously availing themselves of the chance not to think; whenever they think, however, whether in dreams or in action, they can think only in terms of essences: and hence that fundamental illusion, that hypostasis of given essences, which the philosopher should regard as normal and amiable, while avoiding it in his own person as far as possible. He will succeed in this self-discipline in proportion as his interests are intellectual and set on essences rather than on things; he will then feel the sharp contrast between the clear hypothetical pictures in his thoughts and the dark complexities of nature: he will be constantly aware of being an impressionist in physics, a dramatist in psychology, a novelist in history, and a pure dialectician in mathematics. But other philosophers are not lacking to defend the illusion which animal faith imposes on everybody until criticism comes to distinguish the sphere of action from the language in which imagination expresses its adventures there. When intuition remains closely attached to urgent action – in hunting, for instance, or in pain – the essences appearing seem actually to inhabit the material object or the bodily member into which perception projects them. Given essences then seem to be constituents of substances, even when they are descriptive of perfectly immaterial facts, like intentions and feelings: such sentiments, as imagined by the observer, are boldly attributed to other people, and thought of as agencies at work within them. This dramatic sort of hypostasis is after all the most defensible, because if the observer and the observed are similar creatures in similar circumstances, they will really be having similar intuitions; so that our wild shot will hit the bull's eye by a pre-established harmony. The transcript of nature in discourse will, of course, remain poetical, since a man's sentiments are but unrhymed poems which nature improvises within him; but one poet may truly understand and repeat another.

It is harder to conceive how the form of a hollow sphere and the color blue can help to compose the substance of aerial space, or where exactly they shall be deputed to lodge: nor is it clears how these essences can occupy some nearer locus, such as a nerve or a brain. It will not help to call these appearances qualities of things, rather than parts, if the qualities are supposed to be intrinsic: the intrinsic qualities of a thing compose its essence, and its essence, when caught in external relations, is the thing itself. If on the contrary by calling appearances qualities rather than parts of things, it be meant that these qualities are adventitious and relative, the contention is valid; because any aspect, effect, or relation accruing to a thing justifies a new epithet being assigned to it, as on my birth a whole series of dead men, up to Adam, suddenly became my ancestors. So when a human eye is turned skyward, the sky truly acquires the quality of looking blue and round: those are its real qualities in relation to such an observer, as certain substances are truly poison for rats.

These ulterior questions, however, cannot arrest the impetuous dogmatic instinct which asserts things to be what they seem and to exist in the very terms in which they appear. The stones would laugh, if they got wind of this human assurance; but meantime it is not useless in developing human acquaintance with essences: because this incongruous dignity attributed to them, of being material things, has the merit of attaching practical minds to them; and later, if these wise men discover their error, they may have acquired the habit of defining essences, and may find them worth cleaving to for their own sake.

PSYCHOLOGICAL APPROACHES TO TRUTH

George Santayana. "Psychological Approaches to Truth." *The Realm of Truth* (New York: Charles Scribner's Sons, 1938), chap. 4, pp. 31–38.

Even if mathematical ideas were less exactly true of the world, the mere possession of them would be indirect evidence that they had some cognitive value and were in some way true. If we would show them to be false, we must propose other ideas on the same subject which shall seem truer. But what ideas, truer than those of mathematical physics, can we propose on the subject of the field of action or the dynamic world? Undoubtedly, if reality were confined to spiritual being, mathematics would be useless, and the study of it an idle pastime, if not a vice; and if any spiritual man, like Pascal, got too deeply entangled in mathematics, the sad effects might be seen in his self-torture and desperation. A faith founded on logic is an acrobatic and insane faith. It was not logical necessity, but hard practical evidence, that first suggested mathematical ideas to the mind and afterwards confirmed and imposed them. Animal faith honors mathematical science – a fantastic construction in itself – for measuring reliably the footsteps of that stealthy material power that pervades the world. If mathematics measures these footsteps perfectly, mathematics is perfectly true. The reality of psychologists – subjective presence, whether sensuous or conceptual – belongs to a different moral or aesthetic sphere, not mediated by animal faith and not itself conveying knowledge of truth, true as the account of such experience may be which is conveyed later by memory or sympathetic fancy: for often the art of fiction may tell us the truth about the fictions natural to the mind.

Nevertheless, intuition, which is simply sensibility focused and actually noticing anything, comes upon essences, not things: because in proportion as attention takes notice, and honestly observes what it finds, it suspends that animal faith which was involved in fear or care or the physical impulse to react upon some physical stimulus. When clarified and thoroughly actualized, all data are essences: if the spirit could actualize and clarify everything it would live altogether in its congenial ideal world, as it does, with some lingering qualifications, in mathematics and poetry and music. But in animal life this remains an interlude, something marginal and ulterior. Living attention comes upon essences with a bias, from some particular vital angle: they are stepping-stones in a distracted career. Even if clearly focused in their own

plane, essences do not dictate to us in what direction their relations shall be traced: in themselves they have no movement, no selectiveness, no propulsion. The choice of this or that path, in further intuition, is made by the animal mind, under suasion of casual interests or its own vegetative growth. Poetry does not make itself, poets must make it: and so mathematicians must make mathematics. Narrow paths are thus opened by accident through the compact thicket of essential Being; and later comers, threading the beaten way, may suppose that they are surveying the whole structure of the labyrinth, and discovering the eternal Logos, or self-chosen necessary truth. But the labyrinth, being infinite, offers all choices to the wanderer; and the pattern actually traced was selected by accident.

Logic is a refined form of grammar. If in my prattle I obey a tendency, and later establish a rule to the effect that nouns shall be either masculine or feminine; and if I obey a tendency and make it a rule that adjectives shall match and prolong the gender of their substantives; *then* it is requisite for propriety of speech that adjectives and nouns should possess gender, and should march in couples, like clerical school children, the girls with girls, and the boys with boys. And this contrast, with this divided way of trooping together, artificial as it is in things without sex, opens the way to the most charming assonances and beckoning of word to word in discourse, enabling us without confusion to pick our way through a minuet of cross-references, as in an ode of Horace. Yet grammar need never have adopted so fantastic a sexual analogy. It did so only because speech is radically expletive, redundant, and exclamatory, as thought is also; and in a creature to whom sexual images are arresting and highly provocative, sexual analogies, however farfetched, will appear in all sorts of places, particularly when emotion is aroused, and will count for more in the play of description than does the strict truth of the object.

There are other graver intrusions of the grammatical medium into the deliverance of thought. For instance, the relation of subject to predicate is founded on the circumstance that some words are proper names, and merely demonstrative, like a pointing finger; other words are names of essences, without traceable physical being, but appearing dispersed, repeated, and mysteriously intermittent in all sorts of places or in no place at all, that is to say, in the mind. The proper name, indicating and holding down, as it were, the physical object that concerns us in action, becomes the grammatical subject; and the names of such essences as this subject shares with other things become grammatical predicates and adjectives. This grammar registers admirably the education of the mind: for the mind is commonly awakened by some shock, and then proceeds more or less scrupulously to describe the circumstances and the qualities connected with that stimulus.

Moreover, being a spirit beset by animal obsessions, the human mind can retain, compare, and synthesize its impressions, leaving the flux of existence

to run on as full and turbid as it will. Yet this recollection and this withdrawal are always imperfect. The basis of spirit is itself material, fluid, and self-forgetful: while on the other hand, the knowledge gathered and the pictures painted by the mind are simplified unduly, conventionalized, moralized, reduced to types: and this does violence to the truth, since nature is not human education hypostatized. Hence the quarrel between the humanities and science; in which science evidently represents the interests of truth. If the problem were scientific, we should have to consider that science also is human, that neither in texture nor in scope can science be identified with the truth: and that the humanities too convey poetical information about historical matters. But the real problem is moral; and even if science presented the truth more honestly than the humanities, we should still have to ask whether these scientific truths were the most important, and even whether the knowledge of truth is the ultimate goal or good of mind. Frankly, it is not, when the mind is free. Spirit is the entelechy or ultimate fruit of life and not a material instrument or means to action; and if once life were safely adjusted and directed amid material circumstances, consciousness of those circumstances would be superfluous except as it might be interesting; so that truth would take its place side by side with fiction of every sort, to be valued not because true – for merely being true does not make things worth knowing – but only for invigorating and entertaining the mind. Such is the liberal life; and the humanities have this liberal character, although science also has it, in so far as the truth of it enlarges the imagination. But such poetic freedom in thinking is premature, and even criminal, when the psyche is living at cross-purposes with the possibilities of life. Health must be established first and organized securely; and then the range and balance of spiritual interests may be left for free genius to determine.

In any case, it would be a vain scruple in the lover of truth to quarrel with his intellect and with the grammar of his thoughts in order to put his ear closer to the ground. His ear is itself an animal organ, and its deliverance – sound – is the substance of nothing except music. The tread of oncoming reality may be conveyed more impressively or more accurately by one sense than by another: but in the end only intellect and science will be able to reveal the method of that approaching attack, or the method of meeting it by any deliberate or artificial contrivance. There is no ground for deprecating this intervention of art and reason. Mind is better than matter in the estimation of mind: and this judgment is final, because only mind is capable of esteeming or judging at all. Attention to matter is therefore optional for a moral being, and important only when, health having been lost, art is requisite for recovering it; or when, as I was saying just now, attention to matter is spontaneous and self-rewarding, as it is for children and for the true naturalist. The office of matter is precisely to breed mind and to feed it; and while the fantastic egotistical errors into which mind may fall, since it must conceive matter in

terms of ideas, might seem laughable to omniscience, those errors do no harm to matter and very little to mind. An unbiased and literal understanding of matter would be incongruous in an animal; and for pure spirit such understanding remains an ulterior speculative ambition, legitimate certainly, since spirit is potentially omniscient, but rather beside the mark when, being incarnate, that spirit is beset by impurities which it must purge first, before it can ever understand anything or know itself. If it knew itself, spirit would be little pressed to understand the depths of matter, which cannot be changed; but spirit, by existing, does lend to matter a new mental dimension, expressing material organization morally and perhaps gloriously. Better than idly mirroring nature in mind (if it were possible to do so) is to impose an ideal measure upon fluid things, and this not arbitrarily or insignificantly: for the very dependence of spirit, which might seem to condemn it to futility, renders it an index to deeper realities and an organ of truth. Thought would never arise or maintain itself, it would never succeed in imposing formal measures and unities on events, if these events, which include the biological organs of thought, were not already organized and self-distinguished in the bosom of chaos. The very existence of fiction endows fiction with a native relevance to truth.

We are told by certain psychologists that although the dynamic order of events is not *really* mathematical, mathematical fictions must be cultivated because they are *useful in the practical arts*. But why should they be useful if false? And how should they be false if they describe the efficacious order of nature, by which our existence and health and power of speech and thought are notoriously controlled? What better criterions have we of truth than pertinence to action and implication in the dynamic order of nature? Primitive imagination no doubt attributes power to wishes and prayers or to formal rhymes and coincidences in the aspects of things; but that is superstition; and we gradually discover the true order of nature by attentive observation of matter, and experiments with it, and calculation of its quantity and movement. If arithmetical and geometrical notions gain such ascendancy over the expert mind, it is precisely because, in their abstraction, they are the surest measure of the concrete. By them we retrace the actual vectors of reality and energy in the living world. What the vitalists call life is, in comparison, but the after-taste and rhetoric of motion.

Irrelevant, then, as the inner cogency of logic may be to the truth, logic nevertheless possesses a natural truth in its first notions, in its chief lines of deduction, and in many of its development. Such applicability rewards later speculation for the early diligence of mankind in studying material things, turning and molding them, and making their image precise in thought. Ideas are not true because they are clear, but often they have become clear because they were true. This truth gives continual encouragement to the dialectician in tracing his deductions and trusting his insights. Yet he goes too far when

with these ideas, framed on the human scale and true and empirically tested on that scale, he presumes to fathom the depths of matter and of time, and to dictate to nature the mechanism of her motions. He ought rather to expect that in some dimensions of being, for instance, in the mind, or at a high degree of complication, as in living bodies, the applicability of his ideal science should cease to be perfect or should fail altogether. Not that in those regions there is less order than in the gross mechanical world: there is evidently more, and a more organic order: but our images and thoughts are not easily adapted to those latitudes and longitudes, and the most signal instances of responsiveness in events seem to us miracles or accidents.

Such limitations are not at fault in human logic or mathematics, as if mankind had been bewitched and ought to begin thinking with other images and other axioms. Even if such a reform of the intellect were possible, and fresh ideal systems were developed, expressly to fit the regions newly explored, the new logic and mathematics would not be likely to fit all reality, or to possess more than a limited and borrowed truth. Nature, we must never forget, is in flux. This flux may move in any number of streams, according to any variety of methods; and even if, at one time, we had obtained an exact formula for everything, presently the flux might take a new turn, and insensibly change its fluid constitution. Then the very accuracy of our earlier measures would render them worthless in a later world.

Section Two

Evaluations of Santayana on Pragmatism

REVIEW OF *THE LIFE OF REASON*

Addison W. Moore. "Review of George Santayana, *The Life of Reason*, vols. 1–4." *Journal of Philosophy, Psychology and Scientific Methods* 3.8 (12 April 1906): 211–221.

George Santayana. *The Life of Reason or The Phases of Human Progress*. New York: Charles Scribner's Sons, 1905. Vol. I., *Reason in Common Sense*, pp. ix + 291. Vol. II., *Reason in Society*, pp. ix + 205. Vol. III., *Reason in Religion*, pp. ix + 279. Vol. IV., *Reason in Art*, pp. ix + 230.

In the addresses delivered last year at the many memorial celebrations of the late Herbert Spencer's life and work, there was one very common theme: it was the anachronism of such an encyclopedic program as Spencer attempted – an anachronism which even the Hegelians of Spencer's day discovered in the similar ambition of their master, and one, it was said, which Spencer would have avoided had he possessed a larger historical knowledge and appreciation. And it was freely predicted that Spencer's attempt would be the last of the kind to be seen for many generations.

In the face of the extended currency of such comment among philosophers, to say nothing of the cynical attitude of scientists, it must be as significant as it is interesting that one who can not be suspected of any lack of large historical orientation – one, indeed, whose method is historical – deliberately, 'with malice aforethought', sends through the press within a year a volume of what may be called first principles, a philosophy of society, a philosophy of religion, a philosophy of art and a philosophy of science.

To be sure, we are in the midst of a great revival of metaphysical interest. But the products of this revival thus far, as presented in the works of Mr. Bradley, Professor Royce, Professor Fullerton and Professor Taylor, have been in the main of the systematic formal type inevitable in abstract metaphysics. Professor Santayana's work, however, is of a different character. He is interested in tracing the effect of the method upon the content. He is concerned in showing the connection between the general conceptions of reality, truth and goodness and their conditions and effects in society, religion, art and science. In his own sentences, "The problem is to unite a trustworthy conception of the conditions under which man lives with an adequate conception of his interest"; again, "Starting with the immediate flux in which all objects and impulses are given, to describe the life of reason; that is, to note

what facts and purposes seem to be primary, to show how the conception of nature and life gathers around them, and to point to the ideals of thought and action which are approached by the gradual mastering of experience by reason" (I., p. 32).

And Professor Santayana is fully aware of the proportions of his task. He hastens to nip in the bud any suspicion of quixotism by saying that such a program "would be beyond the powers of a writer in this age, either to execute or conceive, had not the Greeks drawn for us the outlines of an ideal culture at a time when life was simpler than at present and individual intelligence more resolute and free."

In general, of course, Professor Santayana's courageous attempt, as all others, must be justified by its fruits. But I can imagine it quite possible for him to say that such an attempt is not only justified but necessitated in advance by his very conception of the place of reason in experience. An inkling of this appears in the subtitle itself, the whole caption being "The Life of Reason, or the Phases of Human Progress." The implication is that the character and function of thought is to be discovered not by isolating it and attempting an analysis of it as 'pure' reason, but by observing reason at work in the world, catching it in the act, taking it in its context in the whole concrete stream of experience. The attempt to discover the nature of reason apart from its products leads to a monstrous misconception of it and the proposal to substitute this changeling for normal reason, for reason as it is in operation, is called "visionary insolence." "Retrospective self-consciousness is dearly bought if it inhibits the intellect and embarrasses the inferences which in its spontaneous operation it has known perfectly how to make" (I., p. 29). If, then, the nature of reason is to be discovered only by observing it at work in science, in religion, in art and in social organization, is it, after all, presumptuous to propose to describe the processes, the phenomena and the results in which the nature of reason, even for one proposing to give the most abstract account of it, must be revealed?

What, then, is the life of reason, or, conversely, what is the rôle of reason in life? The reviewer has to confess that in the end the answer does not appear so univocal as the introduction promises. The problem centers in the relation of reflection to impulse. In other words, in the sort of 'efficacy' ideals have. In the introduction ideals, ends, constructed in reflection, are apparently regarded as actually organizing the material of habit and instinct. Here reason is defined as "efficacious reflection." And the 'efficacy' here consists not merely in an 'added content' which it brings, but in the added *function* of control. Hence we read, "To the ideal function of envisaging the absent, memory and reflection will add ... the practical function of modifying the future. Vital impulse, however, when it is *modified by* reflection and *veers* in sympathy with judgments pronounced on the past, is properly called reason" (I., p. 2). "The life of reason will, then, be a name for that part of experience

which perceives and pursues ideals, all conduct *so controlled,* and all sense so interpreted as to perfect natural happiness" (p. 3). Again, "In the life of reason, as it were brought to perfection, intelligence would be the universal *method of practise* and its continual reward. All reflection would then be *applicable in action* and all actions fruitful in happiness" (p. 5, italics mine). Here we are very properly warned that this controlling, instrumental character of thought does not make it a mere means. It does not prevent its having an immediate value of its own. But though reason may in this sense be "its own excuse for being," yet in order to *be,* it must *do*; and its 'doing' is just the work of converting isolated impulses and instincts into a mutually stimulating and checking, *i.e.*, controlled, system.

But when we reach the chapter on "How Thought is Practical," one is puzzled to find thought losing this character of control and becoming a mere 'expression', 'effect', 'register', 'celebration' of 'mechanical', 'material' activity, into which now all dynamic efficacy is transferred. We now read, "Thought is nature's concomitant expression or entelechy, never one of her instruments" (I., p. 223). "Consciousness itself is not dynamic.... It is merely an abstract name for the actuality of its random objects. All force, implication or direction inhere in the constitution of specific objects" (I., p. 220). "Preferences are in themselves, if the dynamic order alone be considered, works of supererogation, expressing force but not producing it, like a statue of Hercules" (p. 221). Yet near the close of this puzzling chapter we read that the function of thought is "to lend utility to its causes" (p. 233), which here are material. "It is potential energy *producing* life and becoming an actual appearance." Again, in Chapter XI., on "Conditions of the Ideal," "Reason and the ideal are not active forces, nor embodiment of passion at all" (p. 265). Yet on the same page, "This suggested peace (for the conflict of impulses) ... is the ideal which *borrows its practical force* from the irrational impulses which it embodies" (italics mine).

It may be said that the mere appearance of a 'sense of value' in a process 'bestows utility', simply by giving the process a limit, a *terminus ad quem*. But even so this involves some sort of reaction of this 'sense of value' upon the mechanism, otherwise why should the process not simply go on grinding out 'senses of value', without using them as limits? It is Aristotle's problem of the unmoved mover. This discrepancy, as it appears to the reviewer, can be charged to an oversight of the distinction between consciousness in general and reflective, cognitive consciousness. 'Consciousness', 'thought', 'mind', 'reason', are freely interchanged throughout the chapter. Recognizing that the 'sense of value' belongs to consciousness-mind, it is apparently inferred that this is *all* that belongs to it and that all dynamic efficacy must therefore be referred to material nature, of which thought is the mere 'symbol', and which even "can hardly lie in the same plane of reality with the thought to which it appears" (p. 219). Value is obviously a category of conscious activity, and as

immediate 'content' is perhaps not dynamic. But is it not just the business of reflection to convert this '*sense* of value' into an ideal, an end? And as an ideal it surely must be regarded as dynamic in the sense of being an essential factor in a system conceived as 'dynamic'.

In its more general form this question which divides the first and the last four chapters of Volume I. is, How can the ideal be both an 'expression' and a reconstruction of instinct and habit? How can it arise out of and yet be the standard for impulse? In logic it would be the old problem of universals. Now one of Professor Santayana's theses, – indeed, one might say, the fundamental one, – is that the ideal, whether in government, religion, ethics or art, must grow out of, must be an 'expression' of, impulse. The clearness and force of his exposition of the vanity of an absolute ideal given to the impulses from without could not be surpassed. "Demands could not be misdirected, goods could not be false, if the standard by which they are to be corrected were not constructed out of them" (p. 258). Again, "Whence fetch this seminal force and creative ideal? It must evidently lie already in the matter it is to organize. Otherwise it would have no affinity to that matter, no power over it, and no ideality or value in respect to the existences whose standard and goal it is to be" (III., p. 88). The ideal, then, must be an expression of the matter, in order that it may have enough 'affinity' with it to organize it; this despite what is said above about thought not lying in the same plane with its material.

Corresponding to these two conceptions of the ideal, the one as an 'expression', the other as control, there are two conceptions of the 'matter' to be organized. Where the controlling, organizing character of the ideal is emphasized, as in the introduction and in Volume III., impulse, instinct, immediate flux, etc., constitute the 'matter'. But where the ideal is expounded as an 'expression' of impulse, the matter appears as 'physical', as 'body', in opposition to consciousness and as the latter's 'cause', – and this, too, apparently in quite an ontological Cartesian sense. Indeed, the whole treatment of the distinction of mind and body is to the reviewer as equivocal as that of reflection. Sometimes the distinction appears to be a rational construction within a process of experience which can not be described as either or merely both (*e.g.*, I., pp. 39, 234). But again, and perhaps oftener, 'matter' appears as an existential *prius*, as "the antecedent of human life" (II., p. 200) to which somehow "mind accrues."

The present writer is well aware of the enormous capacity of reviewers' quotations for misrepresentation. He is also aware that there are many passages which could be cited to show that what has been described as different and discrepant conceptions of reason and its place in experience, are simply two supplementary phases of one conception, namely, that reason is *both* an 'expression' and a control, and must be the one in order to be the other. However, the reviewer can only record his impression of ambiguity in the account as it stands.

To many such captious, logic-chopping criticism as this may appear *mal apropos* in a review of a work whose style makes the reader feel much of the time as if he were following a brilliant impressionistic commentary on 'phases of human progress', rather than a systematic treatise. But Volume I. is obviously intended as an exposition of general principles, and must therefore, be held to the canons of systematic criticism.

Passing to the treatment of reason in society, religion and art, we find that the indigenous relation of the ideal to impulse so forcibly, if not altogether consistently, expounded in the first volume, is the nerve of the doctrine of these volumes. The history of these aspects of human progress is the story of the reciprocal creation and maintenance of impulse and reflection which constitute the process of human life. Accounts of its defeats are invariably descriptions of the failure to maintain an organic relation of these factors, of attempts to appropriate a readymade ideal in either an absolute or an anachronous historical form.

Thus the ideal side of love does not merely 'add' a larger and more permanent value to the instinctive side, but it constitutes the salvation of the instincts. It is the method whereby any instinctive expression of love can be 'converted' in order to be saved under the new conditions which its own previous activity has created. Instinctive love, therefore, must be reformed in order to survive. This does not mean that it becomes less instinctive. It means only that the instinct shall emerge enriched in quality and extent of its content. When the need of conversion, of idealization is unrecognized, or unheeded, or when the conversion is attempted through extrinsic ideals of another race or clime, or when it becomes virtual annihilation, then all sorts of 'perversions' occur.

Obviously one of the results of immediate, instinctive love, which calls for expansive reconstruction, is the presence of offspring. The family is the ideal construction through which the reproductive impulse is expanded into interest in the protection and development of life. But just because it is thus necessarily one of the earliest organizations of impulse, "it becomes a point of departure for many other institutions." And "it often assumes offices which might have been allotted to some other agency had not the family preempted them." The annexing of these "adventitious, parasitic functions" to the family so overloaded it that it did none of them well. With more stable occupation of land, the reverse process of unloading these functions on new institutions begins.

Here we face again the perennial problem of balance. On the one hand, the refusal to surrender old prerogatives in the face of a new world, or the attempt to conduct the new family by the rules of the old, leads inevitably to dualism and disintegration. This is a problem for experience to solve. It can not be solved in a Utopia. The statesman in his sphere and the individual in his must find as they go the best practical solution. On the other hand, this

unloading upon other institutions, as the school, church, the factory, etc., may go on until the family may be emptied of almost everything but the reproductive function, – bringing up again the problem of maintaining the control and value of the latter. This, perhaps, may be effected by the reaction of these emigrated functions "in stimulating a larger social, philosophical, scientific and artistic interest."

In view of what precedes, one is somewhat surprised at the beginning of the discussion of government to find it identified with "what in physics is inertia, in psychology habit." "In society it (habit) takes the form of custom, which, when codified in law and when enforced, is government. Government is the political representation of a natural equilibrium of custom, inertia; it is by no means a representative of reason" (II., p. 70). But, the reader may ask, if custom were really effective as a custom, why codify it? And what need to enforce it if it is already enforced as a habit? Codification surely is a process of *re*construction, therefore of idealization. And this is really implied in statements which immediately follow. "But like any mechanical complication it (government) may become rational.... Government can by its existence define the commonwealth it tends to preserve." But if it is government through codification, the 'can' should be 'must'.

This is also implied in an interesting and suggestive discussion of the various forms of government which follows. The problem is presented as just that of the best method of constructing and presenting a social ideal. The answer, as Aristotle saw, depends upon the specific conditions. "All just government pursues the general good. The choice between aristocratic and democratic forms touches only the means to that end. One arrangement may well be better fitted to one place and time than another" (II., p. 121). Where there is stratified stagnation, some form of aristocracy, theocracy, monarchy or oligarchy may be the best means to get reconstructive idealization started. However, history seems to warrant the claim of democracy that these forms of aristocracy "have been unable to remain representative." But the inferences which democratic theory often draws, that "eminence is therefore not representative, and that representative character is bestowed by the mechanical expedient of universal suffrage," do not follow.

Many stimulating things are said in the discussion of the distinction between 'political' and 'social' democracy. Political democracy is "a symbolic extension of aristocratic privileges in the form of universal suffrage." "It is quite compatible with complex government, great empire, and may retain, as in England, many vestiges of aristocratic institutions" (II., p. 115). Social democracy, on the other hand, "is a general ethical ideal looking to human equality and brotherhood." "It is the democracy of Arcadia, Switzerland and the American pioneers." Instead of measuring our

prosperity by the quantity of wealth produced, as our present system of economy does, it decries this enormous production, demands less labor, a simpler and more rural life. "It would abandon the great cities to ruin, as seats of Babylonian servitude and folly, leaving the railway bridges to collapse, the tunnels to choke and the hulks of steamers to rust in the harbors." In the present high tide of commercialism such anticipations may seem fantastic. "But does any thoughtful man suppose that this commercial tendency will be eternal or that the present experiment in civilization is the last the world will see?" (II., p. 127). If social democracy would take a more liberal form and permit the benefits of civilization to be integrated in eminent men, whose influence should direct and temper the general life, it would become a timocracy and would, in the author's opinion, "unite the advantages of all forms of government and avoid their respective abuses" (II., pp. 128, 129).

Despite the fact that some readers are sure to renew the complaint of dualism in the character of the relation between the ideal and its material, they may possibly find the author's brilliant power of analogical analysis at its best in the volume on religion. "Another world to live in, whether we expect ever to pass wholly into it, is what we mean by having a religion" (III., p. 6). What, now, is the relation of religion to the life of reason? Let us recall that the essence of reason is the construction of an ideal. And what is the 'other world' of religion but this ideal? "Religion thus exercises a function of reason" (p. 7). What, then, are the differentiae? First, religion carries over into the ideal a part of the material of experience, while in scientific reason the ideal is conscious of its formal and hypothetical character. Further, in its attempts to carry up the material, the masses of sentiment and ideas, into the ideal, it must construct its ideal through the intuitive instead of the conceptual image. Here lies both the real strength and the historical weakness of religion. The statement of the ideal in terms of the material, *i.e.*, in terms of instinctive and perceptual imagery, gives a richness and fullness to religious idealization impossible in science where idealization is more abstract. Indeed, "religion has the same original relation to life that poetry has." The only difference between poetry and religion, purged of its errors, is that "religion deals with higher and more practical themes, with sides of life which are in greater need of some imaginative touch than are those pleasant and pompous things which ordinary poetry dwells upon." Historically, however, "the religious pursuit of the life of reason has been singularly abortive." This because it has constantly confused the perceptive instinctive material which it utilizes to embody the ideal with the unidealized, that is, the actual existent material, and has accordingly often tried to usurp the work of science (II., pp. 8–13.)

Here the reader wishes the volume on science were at hand. From what is here said of science, one suspects that in science, at any rate, the ideal

constructions of reason are likely to be something more than mere 'additions' of value and 'celebrations' of work done by reflexes. Doubtless they are all this, but one gathers that in science, as in the passages above cited in Volume I., the ideal controls as well as 'celebrates'; that the distinction between 'efficient' and 'final' cause is likely to break down.[1]

The fact that ideal construction in religion, as elsewhere, must, on the one hand, be loyal to the impulses out of which and for the sake of which it arises, and yet can only be loyal by 'remodeling' them, determines the two fundamental phases of religious experience – 'piety' and 'spirituality'. Piety is "man's reverent attachment to the sources of his being and the steadying of his life by that attachment" (III., p. 179). "It drinks at the deep elemental sources of power and order. It studies nature, honors the past, appropriates and continues its mission." Spirituality is the creative or rather recreative function of the ideal. Piety is retrospective. Spirituality has its face toward the future, while piety dwells in the realms of established order. Spirituality pitches its tent out on the frontier, not in order to gain a worldly advantage over piety, – for "competitive worldliness is the most deadly foe of spirituality," – but it abides there by virtue of the demands of its free recreative work. By that same token is its habitation also on the borders of mysticism. Mysticism arises out of the element of failure in the work of recreation. It serves to tide over a period of intellectual arrest until there is recuperation sufficient for the work of reconstruction to again become articulate.

Maintenance of spirituality therefore depends upon a proper balance between impulses and ideal. Hence a too rapid differentiation, multiplication of impulses, or a too great sophistication destroys spirituality. However, some readers may experience difficulty in following Professor Santayana to the conclusion that brute life "may be as truly spiritual as human," and that "the only pure mystics are the brutes." For, while mysticism is a renunciation of discursive reflection, the latter must after all first be there to be renounced. The neo-platonist reaches the summit of his mount of transfiguration by the tortuous path of discursive intellection. As a preparation for the ecstatic vision he must first experience the impotence and vanity of reflection.

As for individual immortality, Professor Santayana regards most of the empirical evidence as "beneath consideration." "The palpitating mood in which it is gathered and received make gullibility and fiction play a very large part in the report; for it is not to be assumed that a man, because he speaks in the first person and addresses a learned society, has lost the primordial faculty of lying" (III., p. 230). Even at their face value these reports show only more subtle and subhuman sensibilities than ordinarily appear. They would show only that the process of dying is more complicated than is supposed, rather than point to the existence of disembodied spirits. "A disembodied life

[1] The volume on science has appeared since the review went to press.

would not betray itself in specters, rumblings and spasms" (p. 234). That operations more subtle than ordinary should occur is entirely consonant with reason and experience. But "only a hankering tenderness for superstition, a failure to appreciate the function both of religion and science, can lead to reverence for such oracular gibberish as these influences provoke" (p. 233).

The moral and metaphysical grounds of individual immortality are but little less convincing to Professor Santayana than the empirical evidence. What reason is there to suppose that more justice or that better fulfillment of ideals can take place in another life than here? If there is any continuity in content and method with this life – and without such continuity nothing remains of individual existence – life elsewhere must involve the same reference of ideals to specific conditions and the same possibility of their lapsing and yielding to others more capable of execution (p. 248). Individual immortality is an hypostasis of "the vision of eternity in time." When a fact is idealized through reflection it acquires "a status in eternity." But "having a status in eternity does not mean being a part of an eternal existence petrified and congealed into something real, but motionless." It means only that "every fact in being recognized takes its place in that ideal sphere of truth which is the common and unchanging standard for all assertions" (p. 267).

In view of what is said (p. 248) concerning the basis of the ideal in "a dynamic world," and more especially concerning its relevance to "specific tendencies" and the consequent necessity of its "lapsing and yielding to others," some will question this conception of an ideal sphere of truth which is "the unchanging standard for all assertions," and wonder whether, despite the illumination which Professor Santayana turns on in his exposition of the indigenous ideal, the ghost of absolutism does not still walk in places.

Following the general plan of the entire work, between the initial chapters of definitions and principles and the closing chapters of general conclusions and applications to current problems, are a number of chapters devoted more conspicuously to historical and genetic interpretation, in which the author's unusual ability in suggestive epigrammatic generalization has large play. Many will find these the most attractive part of the volume. The reviewer would note especially the chapters on "The Christian Epic" and "The Christian Compromise."

It was to be expected that Professor Santayana's volume on art would be authoritative; and in the main this expectation is not disappointed. Especially is this true of the chapters presenting the specific contents of art – 'music', 'poetry and prose', etc.; and of the chapters on "The Justification of Art" and "The Criterion of Taste."

In its largest sense, art is simple, practical reason or reasoned practise. "It is plastic instinct, conscious of its aim" (IV., p. 4). But here again we encounter the issue between the epiphenomenal and the instrumental character of consciousness; and again the outcome seems ambiguous. On the one hand,

this consciousness of aim 'simply accompanies' instinct (p. 5). It is not an instrument of control. It is a mere 'expression'. "Only by virtue of a false perspective do ideas seem to govern action" (p. 6). "All invention is automatic, ideas come of themselves, dropping in their sudden form from the blue" (p. 7). "All useful things have been discovered as the Lilliputians discovered roast pig" (p. 10). On the other hand, "art is reason propagating itself" (p. 13) and "reason with the order in every region it imposes on life is grounded on an animal nature and has no other function than to *serve* the same" (p. 191, italics mine). Also we read of objects of art as "things which would not only have *betrayed* the agent's habits, but would have *served* and expressed his intent" (p. 4). This seems to make overt action the expression of the intent, instead of the converse.

In view of the remarks already made on this issue in the discussion of Volume I., we must leave it here with these observations: (1) Of course, from the standpoint of experience regarded as a whole, all activity within it, whether viewed as conscious or unconscious, must be 'automatic', in the sense of being self-active. From this standpoint the operation of ideas is as 'automatic' as that of the heart or lungs. But (2) this does not prevent ideas being 'instrumental' from exercising real control, any more than the automatic action of the heart and lungs destroys their interaction. One stage of activity may condition another without either becoming thereby less 'spontaneous' in its immediate activity. (3) On Professor Santayana's own most excellent showing, ideas can not quite 'drop from the blue'. They must 'express', 'grow out of', be 'relevant to' some instinct or set of instincts. While, in the stock instance, the forgotten name 'just comes' when it does come, yet it would not come even 'in its sudden form' were it not for the want and for the agonizing effort which precedes, fruitless as the latter may appear at the time.

But, after all, this binomial conception of the general relation of art to reason does not seriously affect the rest of the treatment. For in such a case it is always possible when danger threatens from one side to pass instinctively to the other.

Resuming then the account of art in general as activity mediated by an aim, it is evident that contrary to much current opinion, art is not to be defined by mere correlative contrasts with industrial utility, science or morality. Nor is it to be identified with immediate esthetic valuation, which is only a prominent element in 'fine art' as distinguished from 'industrial art'. It is not a specific sort of experience, coordinate with other sorts. It is rather the concrete whole of consciously mediated life of which industry, fine art science, and morality are differentiations.

The general basis of art, then, lies in the fact that in the end an unmediated or a completely mediated activity is an impossible conception. "Activity, achievement, a passage from prospect to realization, is evidently essential to

life. If all ends were already reached and no art were requisite, life could not exist at all, much less a life of reason" (p. 28).

In art in this large sense, as the art of living, there are obviously two fundamental factors: the 'material' in the form of the structural products of past activity, which are demanding opportunity for further function; and the 'ideal' which supplies this opportunity. But once more we must beware of an ideal imposed from without. "The ideal is a concomitant emanation from the natural, and has no other possible status" (p. 28).

The organic relation between these two constituent functions of activity furnishes also the basis for the distinction between 'servile' and 'liberal', or 'fine' art. If the demand of some particular part or organ of the total structure for expression, or for maintenance, is so immediately urgent that a comprehensive organization, *i.e.*, idealization of the response, is impossible, the result is a 'servile' art in the form of the barren automatisms of savage dance and song, or a utilitarian struggle for mere existence. Liberal, or fine art, is the result of a balanced interaction between the activity of that part of the structure calling for expression and maintenance and the idealizing activities of the response. This means that the demands for expression and maintenance are themselves more ideal, less immediate in their insistence; and, on the other hand, that the ideals are more effective because they embody more material.

From this standpoint it is evident that no impassable distinction can be drawn between 'industrial' and 'fine' art. For, "Every proximate end in being attained, satisfies the mind and manifests the intent which pursued it, while every operation upon a material, even one so volatile as sound, finds that material somewhat refractory… . A certain amount of technical and instrumental labor is thus involved in every work of genius, and a certain genius in every technical success" (p. 33). In so far as the distinction is to be made, it is simply one of stages in one continuous process. The industrial stage is the one "in which untoward matter is being better prepared or impeding media are overcome." In the liberal stage, the prepared matter "is appropriated to ideal uses and endowed with a direct spiritual function" (p. 32).

After this identification of the essential elements of art with those of other rational functions, one is not surprised to find the volume closing with an eloquent arraignment of the modern separation of art from its industrial, moral, religious and social matrix. As usual, Professor Santayana's own words can not be improved, hence I quote freely. "The great obstacle which art finds in attempting to be rational is its function isolation." At present art "too much resembles an opiate or a stimulant." Our museums are "mausoleums in which a dead art heaps up its remains." "Art whose products are so collected and exhibited is gratuitous and sophisticated and the greater part of men's concern about it is affectation" (p. 209). "Art, like religion, needs to be absorbed in the life of reason.... It needs to have its processes diffused throughout all life activity, instead of being confined to abstract

productions called 'works of art'" (p. 208). At present art is symbolic and vicarious and stands in contrast with reality. But if "it were knit more closely with other rational functions, to beautify things might render them more useful, and to represent them most imaginatively might be to see them in their truth" (p. 213). Then, "No work would be called in a special sense 'a work of art', for all works would be such intrinsically. There would need to be no division of mankind into mechanical, blind workers and halfdemented poets, and no separation of useful from fine art, such as people make who have understood neither the nature nor the ultimate reward of human action. All arts would be practised together and merged in the art of life, the only one wholly useful or fine."

REVIEW OF *SCEPTICISM AND ANIMAL FAITH*

John Dewey. "Review of George Santayana, *Scepticism and Animal Faith*." *The New Republic* 35 (8 August 1923): 294–296.

Mr. Santayana has been known to readers, professional and lay, as a critical commentator of life, as a moralist in the true sense of the word. His insight and notation have been so genial and direct that some readers, professional as well as lay, have classed him as without philosophy, as without continuous logic, an utterer of aperçus, interesting to those whom they interested but without logical coherence and foundation. This view is a tribute to the art of Mr. Santayana and the consummate skill with which he kept his long logic subordinate to his vision and expression of the facts of life, of the good or happy life. Speaking of this dullsighted class of critics Josiah Royce once remarked that Mr. Santayana had a definite philosophy from which he never departed: the radical and complete separation of existence and essence.

In his new book the role of morals and metaphysics (Mr. Santayana himself uses the latter word in a different and disparaging sense) is reversed. Its theme is the separation of existence and essence, the beauty of essence and the indignity of existence. Essence is doubly beautiful; it is the subject-matter of the poet's vision; every soul that sees the world simply and candidly without the sophistication of dogma – which is much the same as without the sophistication of practical ambitions – is poetic. It is also, under Mr. Santayana's hands, a thing of beauty for the philosopher for it enables him, when it is rightly envisaged, to become a complete and thorough sceptic as to direct knowledge of existence while it also opens to him an unshakable "cognitive certitude" – the being of essences which are the only thing worth knowing. For, as the acute reader of Mr. Santayana's moral writings is aware, existence is to him inherently ridiculous, for the physical basis and origin of ideal goods (and of course essence is ideal) is comically disparate to its ideal fruits. All existence is physical or is matter, and since essence is ideal and its generation by existence is adventitious and its maintenance accidental, existence is meaningless. And what can be more comic than existence which is meaningless, aimless and mechanical, and yet is the sole author and support of the only things worth while, the ideal forms that fill consciousness? And so the moral – for Mr. Santayana cannot even as an overt dialectician wholly

cease being a moralist – is to enjoy the contemplation of essence. Moreover by perceiving and enjoying the spectacle of the total irrelevance of existence to essence, we may escape from the tragedy of existence. For tragedy has its source in expectation – in expecting existence to do something for us, in being interested, as we are interested, in meanings, goods. Thus complete scepticism as to existence saves us from expectation, which is practical, egoistic, the tragic illusion of the man who takes material affairs seriously instead of taking essences poetically. Mr. Santayana's sympathy with Greek thought has always been familiar to his readers. His present work reveals – and I think the revelation will come to others beside myself as a surprise – a congeniality with Indian Brahman thought: the insignificant character of the whole world of existence.

As Mr. Santayana is aware there are points in his doctrine that are dangerously similar to types of philosophy for which he has only abhorrence. One of the most illuminatingly direct chapters – and Mr. Santayana's discourse is much less direct than his perceptions – warns the reader against misinterpretations of the doctrine to which the history of thought shows the mind is prone. The Platonists are conspicuous for their discovery of essences, but they give them not only existence but prerogative existence. Essences are not models nor causes, nor intrinsically good. Every bad thing illustrates an essence as fully as things that are excellent. The idealist also misconceives essence; he is so overpowered by its discovery that he holds that it is the only existence, so that matter does not exist. The right conclusion, however, is that matter is the only thing that does *exist*, that works, that is causal and efficient. It is never known immediately, but only symbolically through the essences that it fortuitously causes to vegetate in the mind.

Mr. Santayana has nothing but scorn for those who doubt the existence and omnipotence of matter. The more sceptical we are of the existence of anything given, the greater the practical assurance of things which are not given to mind. Essences are only poetic, aesthetic, objects of immediate contemplation. But besides consciousness, which holds and enjoys these essences, perception and intuition, man is primarily a living body striving to make its way in a world of other bodies that have no interest in its success and failure. To have survived at all in an adventitious world means that the animal body has acquired some degree of adaptation to the material medium which determines its destiny. In the realm of essences the mind is purely contemplative and at play. But the body has to work to live; it has to meet and adjust itself to hard circumstance. The organized structure of the body in its achieved adaptation to physical surroundings or what are usually called instincts, reveals to us such attachments to the world of existence as essences may possess. These instinctive adaptations are common sense, or as Mr. Santayana calls them, animal faith. And as it is by poetry and the imagination that we live in the world of essence, so it is by animal faith that we ascertain that some

of these essences are symbolic of material things since they serve us in judging the material environment, in securing meat and drink, and averting for a time disease and death. Essences are present and timeless; but the perpetuation of the body depends upon memory, prudence, foresight, upon concern with what is not given, with what alters and is in time. It is this concern with time, this need for readiness to deal with things not given, not present in sensation or imagination, which selects those essences that are significant of something beyond themselves, which constitutes them transcendent, or cognitive of things beyond themselves. As with Spinoza, essence is mind, existence is matter.

Essences remain essences, the proper and rewarding objects of aesthetic contemplation and the free play of mind. But their adventitious conjunction with the needs of the animal body gives some of them practical intent and makes truth and error possible as they are used rightly or wrongly to signify some feared or hoped for object. Science changes the style of essences which are employed, because science has to meet larger, more public and remote needs and conditions. But it springs from the same wedding of essences to animal requirement and its objects differ from the essences of mythology only in that they are kept closer to the tests of existence applied to the determination of a living creature to go on living. "External objects interest man for what they do, not for what they are; and knowledge of them is significant, not for the essence it displays to intuition (beautiful as this may be) but for the events it expresses or foreshadows. It matters little if the very existence of external things is vouched for only by animal faith and presumption, so long as this faith posits existence where existence is, and this presumption expresses a prophetic preadaptation of animal existence to the forces of the environment." The practice of the arts is our most reasonable assurance of the existence of things beyond mind and perception.

It is impossible to render an adequate account of Mr. Santayana's new book. I have confined myself too closely and literally to such phases of it as may illustrate merely its title. If Mr. Santayana desired revenge upon those who have assumed that because he subordinated dialectic to expression, he lacked logic, he has it in this book. For continuity and subtlety of dialectic the book, though couched in a radically different philosophy, is worthy of Mr. F. H. Bradley, the master of living dialecticians. Indeed, it is so closely wrought and so sustained that it is to be feared that those who did not find coherent system in his earlier writings will not discover it here. Mr. Santayana promises a sequel; I shall make no adverse criticism of this book beyond saying that the sequel is badly needed. It is a delicate enterprise to discount practical intent and the busy life of man in behalf of aesthetic essences and their contemplation, and then to rely upon the practical needs, acts and sufferings of man to make sure of the existence of anything, and to render essences applicable to things and expressive of their careers. A priori one

would say that both things cannot be done, and that having surrendered so much to a naturalistic pragmatism Mr. Santayana must surrender more. But succeed or fail, the enterprise is technically one of the most exciting undertaken by any contemporary philosopher. And those who are not excited by the technique of a virtuoso will as always be rewarded in reading Mr. Santayana by the felicitous insight and the genial irony that find incidental expression on every page.

HALF-HEARTED NATURALISM

John Dewey. "Half-Hearted Naturalism." *Journal of Philosophy* 24.3 (3 February 1927): 57–64.

The ambiguity of philosophic terms and of the conceptions for which the words stand is indicated by the way in which Mr. Thilly cites, approvingly, Mr. Santayana's characterization of my mode of thinking as half-hearted naturalism.[1] To Mr. Santayana, naturalism is a desirable thing; the short-windedness of my devotion to it is matter for adverse criticism.[2] To Mr. Thilly, my half-heartedness is the saving clause; it intimates an idealistic strain which in spite of myself gives a redeeming touch to what would otherwise be, I suppose, sheer mechanistic materialism. There is no word in the history of thought which carries more varied meanings than "nature"; naturalism shares in its diverse significations.

I am not equipped with capacities which fit one for the office of a lexicographical autocrat, and I shall make no attempt to tell what naturalism must or should signify. But I may take advantage of the opportunity to say what empirical naturalism, or naturalistic empiricism, means to me. I can not hope to offer anything new, or anything which I have not said many times already. But perhaps by concentrating on this one point I may make the tenor of my thinking clearer, and incidentally throw some light on why it appears, from two opposed ends of the philosophic gamut, to be half-hearted.

"In nature," says Santayana, "there is no foreground or background, no here, no now, no moral cathedra, no centre so really central as to reduce all other things to mere margins and perspectives" (p. 678 [this volume, p. ???]). The statement is dogmatic; I do not say this in reproach; Mr. Santayana professes himself a dogmatic naturalist, and everyone, in my conception, must be dogmatic at some point in order to get anywhere with other matters. But even a dogmatist may be asked the grounds for his assertion, not, indeed, in the sense of what proof he has to offer, but in the sense of what is presup-

[1] Thilly, the *Philosophical Review*, Vol. XXXV, p. 532, in an article entitled "Contemporary American Philosophy." Santayana, *Journal of Philosophy*, Vol. XXII, p. 680, in an article entitled "Dewey's Naturalistic Metaphysics." All further quotations of Santayana are from this article.

[2] *Ibid.*: "I am myself a dogmatic naturalist," p. 687 [this volume, p. ???].

posed in the assertion, from what platform of beliefs it is propounded. I can not think that Santayana supposes that it is self-evident to others or to himself that nature is of the sort mentioned. The sweep and import of the statement is the more striking in that Santayana professes to operate without any metaphysics and is confident that a whole-hearted naturalism is inarticulate, a kneeling, before the unknowable and an adjuration of all that is human.[3] Since knowledge of nature is not the ground for Santayana's statements as to its character, their ground, I take it, is negative and antithetic; the traits denied are those which are characteristic of human life, of the scene as it figures in human activities. Since they are found where man is, they are not, it would seem, attributable to anything but man; nature, whatever else it is or is not, is just something which does not have these traits. In short, his presupposition is a break between nature and man; man in the sense of anything more than a physically extended body, man as institutions, culture, "experience." The former is real, substantial; the latter specious, deceptive, since it has centres and perspectives.

To me, then, Santayana's naturalism appears as broken-backed as mine to him seems short-winded. It is in virtue of what I call naturalism that such a gulf as Mr. Santayana puts between nature and man – social or conventional man, if you will – appears incredible, unnatural and, if I am rightly informed as to the history of culture, reminiscent of supernatural beliefs. To me human affairs, associative and personal, are projections, continuations, complications, of the nature which exists in the physical and pre-human world. There is no gulf, no two spheres of existence, no "bifurcation." For this reason, there are in nature both foregrounds and backgrounds, heres and theres, centres and perspectives, foci and margins. If there were not, the story and scene of man would involve a complete break with nature, the insertion of unaccountable and unnatural conditions and factors. To any one who takes seriously the notion of thoroughgoing continuity, the idea of existence in space and time without heres and nows, without perspectival arrangements, is not only incredible, but is a hang-over of an intellectual convention which developed and flourished in physics at a particular stage of history. It is not pragmatism nor any particular philosophical view which has rendered this conception questionable, but the progress of natural science. One who believes in continuity may argue that, since human experience exhibits such traits as Santayana denies to nature, the latter *must* contain their prototypes. The new physics finds them necessary to describe the physical world in its own terms.[4]

[3] "A naturalist instinctively, ... who, heartily despising the foreground, has fallen in love with the greatness of nature and has sunk speechless before the infinite" (p. 679 [this volume, p. ???).

[4] The use of the terms "events" and "affairs" in *Experience and Nature*, which Mr.

There are many occasional statements in Mr. Santayana's expositions which indicate that his agnosticism is not as complete in detail as it is in formal official statement. In discussing specific matters he often suggests that he shares the belief of the ordinary man that human experience, adequately safeguarded by a normal organism and a proper equipment of apparatus and technique, may afford dependable indications of the nature of things that underlie it; that we do not merely fall back on an "animal faith" that there is some adorable substance behind, but that we come to reasonable terms with its constituents and relations. If one generalizes this position, then the main features of human life (culture, experience, history – or whatever name may be preferred) are indicative of outstanding features of nature itself – of centres and perspectives, contingencies and fulfillments, crises and intervals, histories, uniformities, and particularizations. This is the extent and method of my "metaphysics": – the large and constant features of human sufferings, enjoyments, trials, failures and successes together with the institutions of art, science, technology, politics, and religion which mark them, communicate genuine features of the world within which man lives. The method differs no whit from that of any investigator who, by making certain observations and experiments, and by utilizing the existing body of ideas available for calculation and interpretation, concludes that he really succeeds in finding out something about some limited aspect of nature. If there is any novelty in *Experience and Nature*, it is not, I should say, this "metaphysics" which is that of the common man, but lies in the use made of the method to understand a group of special problems which have troubled philosophy.

Experience thus conceived is obviously opposed to the usage of the word in the English psychological tradition, a divergence which I was at some pains to point out in criticizing the latter. I consider myself justified, however, in departing widely from the strain of Locke and Hume and James Mill, because I believe that I am only reverting, with some critical purification, to the implications of its everyday untechnical meaning. Experience, thus conceived, constitutes, in Santayana's happy phrase, a foreground. But it is the foreground *of* nature. If I differ from Santayana as to this latter point, the difference lies in that he thinks of the foreground as a screen which conceals the background; to me it conducts our thought to the background. Apparently he conceives of the foreground as lying between human intuition and

Santayana finds redolent of a submergence of real "nature" in an all-absorbing human moralism, was dictated by the fact that physical science is now compelled, on its own behalf, to employ, if not these words, at least these ideas. On the philosophical side, it is dictated by the fact that the metaphysics, adhered to as far as I can make out by Santayana, which treats nature as a single substance whose parts and changes as such are illusory, is a flight of metaphysics which is beyond me, and which appears to be a survival of a rationalistic spiritualism which he officially repudiates.

experience and the background; to me human experiencing is the foreground, nature's own. He also may think that the background alone is nature to the exclusion of the foreground; I am not sure. But I am sure that the foreground is itself a portion of nature, an integral portion, and that nature is not just the dark abysmal unknown postulated by a religious faith in animality, especially since on such a view animality itself becomes a matter of faith.

Holding these views, the reader may dimly imagine the shock I felt when I read that it is axiomatic with me that "nothing but the immediate is real" (p. 683 [this volume, p. ???]).[5] A large portion of Mr. Santayana's article is a dialectic development of the consequences of such a belief, and naturally a destructive one. Since he thinks the view is mine I can only be grateful to him that he did not devote his skillful dialectic to showing that the whole of *Experience and Nature* is a mass of contradictions; the doctrines of "instrumentalism" with its assertion of recurrent identities in nature and of efficacious connections among natural existences, and of knowledge as always mediate and relational, evidently contradict the belief that only the immediate is real. But perhaps lack of interest in my discussion of specific topics on the part of Mr. Santayana saved me from that fate. I repeat, then, that I hold that everything which is experienced *has* immediacy, and that I also hold that every natural existence, in its own unique and brutal particularity of existence, also *has* immediacy, so that the immediacy which characterizes things experienced is not specious, being neither an unnatural irruption nor a supernatural imposition. To *have* traits, however, is not to *be* them, certainly not in any exclusive sense; and a considerable part of my discussion of special topics is an attempt to show that characteristic traits of the subjects dealt with are to be accounted for as "intersections" or "interpenetrations" (I could think of no better words) of the immediate and the nexional or mediatory, just as my criticism of various philosophical theories rests on showing that they have

[5] Lest silence be taken to imply assent, I state specifically that the positions taken by me are as distant as may be from those attributed to me by Santayana on pp. 685–686 [this volume, pp. ???]. If I held them I should admit his argument against them to be conclusive, but they are as unreal to me as they are to him. As he says, "practice precludes" any such beliefs, and while I am not as much of a pragmatist – or at least not the kind of pragmatist – as I am sometimes alleged to be, I am not so witless as to try to unite respect for practice with a belief in the exclusive absoluteness of immediacy. He says: "The dominance of the foreground, avowedly relative, has been turned from a biological accident into a metaphysical principle" (p. 686 [this volume, p. ???). But since I do not regard the foreground as an accident and since I also do not regard the mid-distant biological as an accident with regard to the physical, my "metaphysical principle" is that the related foreground may be taken as a method for determining the traits of the background. Treating the foreground as an "accident" illustrates what to me is unnatural in Santayana's notions. In lieu of many references which might be made to *Experience and Nature*, I content myself with one, p. 262.

isolated one phase at the expense of the other. That I do not think the immediacy which matters of experience have is specious or non-natural, I freely admit, for a nature that had no immediacy would not even exist, and the precious word "substance" would then turn out to be a synonym for that other word "essence." But perhaps such a naturalism as this is *too* whole-hearted to be acceptable.

Mr. Santayana says: "Suppose I say that 'everything ideal emanates from something natural.' Dewey agrees, understanding that everything remote emanates from something immediate. But what I meant was that everything immediate – sensation, for example – emanates from something biological" (p. 685 [this volume, p. ???], foot-note). This statement of what I believe is a specific case of the assumption that I hold that only the immediate is real and that the foreground is a foreground of nothing. So I repeat that while "consciousness" is foreground in a preeminent sense, experience is much more than consciousness and reaches down into the background as that reaches up into experience. I agree that the ideal "emanates" from the biological; I have been even criticized by other critics as if I held it to be a mere gaseous emanation from the biological. In reality I think that the ideal, sensation, for example, is as real as the biological from which it emanates, and, expressing a higher meed of the interaction of things than does the biological without sensation, is in so far I will not say more real, but a fuller reality. Nor do I believe that sensation is immediate, though it *has* immediacy. It bears within itself connections; it carries something of the remote conditions which call it into existence; otherwise it could never serve as a sign nor have cognitive value. And lest this disclaimer should be interpreted in the sense which Santayana points out in the context, namely, to mean that the *concept* of sensation is derived from biological concepts as terms in discourse, I add that I mean the derivation from the biological of the ideal in a literal existential sense. When Mr. Santayana goes on to say that it emanates from "the largely unknown or humanly unknowable process of animal life," there is indicated, perhaps, a difference. That the biological process and its history of eventuating (*pace* Santayana, for the suggestion of "history" and "event") in sensation is largely *unknown*, is only too evident. But to my mind this ignorance is not because experience interposes a veil, but because experience has not been sufficiently probed for its indications. To Mr. Santayana, if I understand him – and perhaps I do not any better than he does me – experience is such that "humanly unknowable" is his proper phrase. But in that case, why refer to the underlying conditions as biological? Or is it merely that all discourse, since experiential, is specious and conventional, and that one phrase is as good as another over against the abysm of unknowable Substance, God, Matter?

Santayana finds traces of my actual position, in as far as it is identical with his in the matter of the biological basis and substantiation of the ideal, in my

implicit behaviorism. But Mr. Santayana always makes it as difficult as possible for anyone to agree with him, and so he criticizes behaviorism as a peculiarly "American" form of externalism. The real gravamen appears to be that Santayana thinks that the behavioristic account of thought in connection with animal functions is bound to deny mind itself. There are psychologists who call themselves behavioristic who doubtless do precisely this thing. Santayana thinks that I must be either a behaviorist in this sense or a speculative egotist, and that my empiricism compels me, in spite of tendencies in the former direction, to become the latter. But the main thesis of *Experience and Nature* is that human experience is intelligent (including, of course, misintelligent) and emotional behavior. In other words, I have tried to bring together on a naturalistic basis the mind and matter that Santayana keeps worlds apart. The attempt, I know, is unusual; perhaps it is doomed to frustration, but I should not want that matter prejudged on the basis of my own ineptness. The trial is bound to be made again, and again, and I hope with increasing success. That success is impossible, given Santayana's premises, I am quite aware. But why not change the premises? My dependence upon the social or conventional medium may be too great, but my faith in it does not extend to believing that the last word on matter and mind has been said by it.

Mr. Santayana says that the foreground as conceived by me is a social world, a social medium. This he terms, somewhat invidiously, I think, convention. But, accepting the word "convention," I state what I have already implied, that "convention" is not conventional, or specious, but is the interaction of natural things when that interaction becomes communication. A "sign" may be conventional, as when a sound or a mark on a piece of paper – themselves physical existences – symbolizes other things; but *being* a sign, the sign-function, has its roots in natural existences; human association is the fruit of those roots. I can understand Santayana's idea that the social medium is conventional in a prejudicial sense only as another illustration of that structural dislocation of non-human and human existence which I have called a broken-backed naturalism. One of the basic contradictions which Santayana might readily have pointed out in my conclusions, if I really hold that only the immediate is real, concerns the social. He says that I have a "tendency to dissolve the individual into his social functions" (p. 675 [this volume, p. ???]), which, put in logical language, signifies that I resolve the immediate into the mediate. But since I find in human life, from its biological roots to its ideal flowers and fruits, things both individual and associational – each word being adjectival – I hold that nature has both an irreducible brute unique "itselfness" in everything which exists and also a connection of each thing (which is just what *it* is) with other things such that without them it "can neither be nor be conceived." And as far as I can follow the findings of physics, that conclusion is confirmed by the results of the examination of

physical existence itself. Since experience is both individualized and associational and since experience is continuous with nature as background, as a naturalist I find nature is also both. In citing Mr. Santayana's denial that nature has here, now, and perspective, I found myself in stating my own view compelled to use the plural form: – heres, nows, perspectives. I would not draw an inference from the mere use of a word, but Santayana's use of the singular form is suggestive that he thinks experience is something sole and private, and so thinking attributes a similar view to others who use the term. It *is* absurd to confer upon nature a single here, now, and perspective, and if that were the only alternative, I should agree with Mr. Santayana in his denial. But there are an indefinite multitude of heres, nows, and perspectives. As many as there are existences. To swallow them up in one all-embracing substance is, moreover, to make the latter unknowable; it is the logical premise of a complete agnosticism. But such an embrace also makes substance inconceivable, for it leaves nothing for it to absorb or substantiate. Moreover, the things which have heres and nows all interact with one another; they form a world of intercourse and association, though not of that communication which is a fuller exhibition of their connections with one another. If, perchance, I have exaggerated by my manner of speech the associated aspects of experience, it is because the traditional theory of experience dominated by a false psychology (as the traditional view of nature which Santayana reflects is dominated by a false physics) has ignored and denied that phase, assuming, as Mr. Santayana appears to do, a sole and lonely here and now.

It is not my purpose to criticize Mr. Santayana's philosophy, but to make an evidently much-needed statement of what I hold in distinction from what is imputed to me. This intention moves me even when I go on to say that I find two movements and two positions in Santayana which are juxtaposed, but which never touch. In his concrete treatments of any special topic when a matter of controversy to which traditional school labels are attached is in abeyance, he seems genuinely naturalistic; the things of experience are treated not as specious and conventional, but as genuine, even though one-sided and perverse, extensions of the nature of which physics and chemistry and biology are scientific statements. But he has a number of pigeonholes into which every philosophy must go with its appropriate, fixed, and absolute tag attached: – his own philosophy when it becomes self-conscious as well as those of others. When he lets himself go in any body of subject-matter, free from the influence of traditional and professorial labels, I not only learn much from him, but I flatter myself that I am for the most part in agreement with him. But when he deals with a system of thought and finds it necessary to differentiate his own system from it, his naturalism reduces itself to a vague gesture of adoring faith in some all-comprehensive unknowable in contrast with which all human life – barring this one gesture – is specious and illusory. Only in this way can I explain the fact that while I find myself in so much agreement with

him he is in such profound disagreement with me. The case seems to resemble that of the Irishman who said the two men looked very much alike, especially one of them. Barring that feature of Mr. Santayana's thought to which exception has been taken, I am happy to be that one.

Section Three

Writings by C. I. Lewis

IDEA AND OBJECT

C. I. Lewis. "Idea and Object." *The Place of Intuition in Knowledge* (Ph.D. dissertation, Harvard University, 1910), chap. 6, pp. 121–144.

For every activity of thinking, for every purpose which is purpose to know, there must be something having the specific character of intuitions upon which this activity is directed. Otherwise the purpose is empty, and the activity has no content, no direction, and no meaning. Our activity of attending abstracts from the given, and thus what is discriminated becomes explicitly the presentation of the object of thought in the moment of attention. It is this presentation – which maintains, in the moment of attention, that specific character which it had in the awareness, – which becomes the *denotation* of the idea, – that which the idea identifies in the present experience as its object. But the presentation is not the entire denotation of the idea, for it does not fully satisfy the purpose of our thinking. Our purposive activity intends not only the discrimination of the presentation, but the understanding of it; and the presentation can be understood only as it belongs to that complex which we call the real object. The presentation of the object is not, thus, the completion of knowledge, but only the *sine qua non* of knowledge. Only as that which the idea denotes – the real object – is partially identified by its presentation in experience, does the idea *mean* anything. Once deprived of this specific intuitional presentation, the idea could never identify in experience anything which it intended. It would be forever shut out from the world of experience, and could never have any content but its own cogitatio. Strictly, it could not have so much as that, for our own thought process and our own purposing may become the content of idea only as it is *not* the activity which thinks but that which is thought. And if our purpose and thinking had not, when mediated, just that specific 'feeling' character which marks every other content, it could never be thought about at all, for no thinking could identify in experience that which such words as activity and purposing might *mean*.

Without intuition there can be no presentation of an object of thought, no object even partially identified, and *no idea*. Knowledge abhors a vacuum; pump out the specific content of the idea, and experience immediately refills the cavity, be it only with that feeling of emptiness which marks our failure to identify, as we intend, our object.

Yet certain objections may be raised against such a view. There are some kinds of ideas which, even if they have some experiential content in the wide

sense just suggested, are still not busy about anything which could really be called the presentation of their object. Abstract ideas seem to belong to this class, and there is some doubt about our thinking of the past and future. All that class of ideas for which there is no content which is 'mediated by our sense organs', offer difficulty. Also, the objections raised seem to find strong substantiation in all cases of symbolic thinking. The black marks on this page and the figures on the board are in no sense presentations of the objects of which they serve to remind us. They have not the specitic intuitional characteristics of these objects, and in no sense give us the qualitative richness of their content. The whole domain of 'imageless' thought contradicts our view.

These objections are based upon subtle errors. For the most part, they rest upon the narrow and technical interpretation of 'presentation' which is characteristic of empirical psychology, – the interpretation which contrasts 'images' with concomitant sensations and feelings and with 'reflexes'. As Myers notes, the presentation is stripped of all those characters which give it meaning.[1]

The contention with regard to abstract ideas alone seems to have a different force. There has frequently been, in philosophy, some tendency to regard abstract ideas as entirely different from *ideas as something abstracted*, and as having a content of entirely different nature. If it is difficult to find explicit statements which reveal this, still it is the general tendency which is marked by insistence upon the 'intellectual character' of logical processes and upon the sharp dividing line between class concepts and 'representations' of particular things.[2] It is the notion of abstract ideas against which Berkeley directed his opening argument of the "Principles." The tenor of Berkeley's remarks is instructive. In brief it amounts to this: We can have no idea of a horse which is neither black nor white nor piebald, of no triangle which is neither acute nor right nor scalene but is 'triangle in general'. We can, to be sure, reason about the character of triangles in general; because we can take a particular triangle and *neglect* all those features which are peculiar to it. In other words, we can refuse to *attend* to any character of the triangle except its having three sides and three angles. We can *abstract from everything but its triangularity.* Berkeley failed, it must be admitted, to recognize the implications of his own argument. But he has here set forth the true character of abstract ideas. They are ideas of something specific which may be abstracted from, discriminated in, many experiences, – of a single aspect or quality of many 'objects'. But if they were truly without any intuitional character, then an abstract idea – triangularity, for example – would fail to recognize any concrete triangle as its object; abstract 'redness' would no longer denote that 'indefinable' quality which we intend by it but would equally well apply to

[1] See p. 72, footnote.

[2] See quotation from Descartes, p. 4.

blue or green. We should have again the realm of ideas and the realm of experience, the class concepts and the classes, with an impassable gulf between. When abstract ideas are correctly understood, they are seen to differ only in one respect from others. *Every* idea comprehends no more than certain characters of its real object. It is an only partially specified 'what', and can never, in finite experience, be so specified as to comprehend completely the characteristics of anything concrete and individual. Some ideas, however, are specified to such a degree that, *owing to the selected character of our experience* – its difference from the all possible, – they denote only *one* object, and are thus distinguished from general ideas or class concepts. *As object of thought*, every individual real is comprehended only as an infima species – in a sense different from Aristotle's: its truly individual character – so far as this is not simply our ability to determine it uniquely, but is its own peculiar essence which would require infinite specification – is always transcendent of our thinking.

Memory ideas and ideas of imagination seem to call for little comment. Only as the memory idea is the presentation of something specific and intuitional can it be the memory of anything experienceable; and imagination would seem patently to be always a presentation of images. Imagination is 'constructive' only in the sense that it synthesizes 'reproductory' elements in a new complex. Its 'material' is intuitional. Indeed we may say that the memory and imagination differ most markedly from other kinds of awareness – vividness neglected – by the presence of an *additional* element.[3] Memory is marked by the quality of 'pastness', as recognition is characterized by the 'feeling of at-homeness'; and imagination differs principally in its relations to other possible content of thought, in a certain lack of coherence with the movement of awareness in general. Imagination, like the dream, may differ from 'real' experience only because sooner or later we give over our fancying or awaken.[4]

'Symbolic' thought is more difficult to deal with. There is no peculiar 'fourness' about '4' or 'given' about these marks which represent it. The plan

[3] Even the difference in vividness is often not marked. See Münsterberg: "Beiträge zur Experimentellen Psychologie," Heft IV, p. 18: "Wir sehen, wir hören, wir tasten einen Reizkomplex und fassen ihn so auf, dass wir die Lücken unserer Wahrnemung durch die Reproductionen früherer Erfahrung ausfüllen, ohne dass uns ein Unterschied zwischen objektiven Eindruck und subjektiven Zuthät überhaupt ins Bewusstsein tritt."

[4] Cf. Leibniz, "New Essays," ed. Macmillan 1896, p. 421: "The truth of sensible things consists only in the connection of phenomena, which must have its reason and is what distinguishes them from dreams; ... there is ordinarily some difference between feeling and imagination.... And the connection of the phenomena which guarantees the *truths of fact* in respect to sensible things outside us, is verified by means of the truths of reason; as the phenomena of optics are explained by geometry."

of a house has not the qualities of the house, nor is the sound of a word the presentation of its meaning. The fundamental error here lies in a dual character of our thinking, a sudden twist which we may often give it, and a consequent confusion of two aspects which *every* presentation may have, but which are especially noticeable in the case of 'symbols'. I suddenly reflect that my neighbor's clothes and physiognomy are not *him*, that what I see of the house is not the *house*, that 4 is not 'fourness', and so on. In each of these cases, I make an *abstraction* from the given which is guided and secured by a peculiar purpose of speculative character. I am reflecting upon the *transcendence* of the real object. I see '4', and suddenly *stop adding or subtracting* to note the insignificant and irrelevant character of this symbol itself; I *give over reading* to reflect upon these unmeaning marks. My thinking has a new purpose, a new *Aufgabe*, and I abstract from the given in an entirely different way.[5] But so long as I truly read or add or subtract, '4' is the presenttaion of a number or of the numerical attribute of something which I continually identify by that 'symbol' in experience. Only when I stop thinking of my object and *think of my thinking*, do these symbols cease to be presentations of real objects. The psychologist may tell me that I am a 'motile' and do much of my thinking in terms of sensations from the 'voluntary' muscles; or I may be of philosophical turn and think in 'vicious abstractions', which are psychologically the sounds of words in my own mouth. But the psychologist has his own peculiar purposes and ways of abstracting. Thus he has stripped my presentations of just those characters of meaning which, at the same time, he asserts that they have for me. Very likely, these 'motor settings' are the most important aspects of my objects, or their 'class names' may be the parts or characteristics which are most significant for my present purposes in dealing with them. As the unfortunate Romeo reflected, a name may be a very meaningful part of an object, and one very hard to abstract *from*. When the bookkeeper balances the cash, certain figures will cause a feeling of satisfaction, while certain others might bring him sleepless nights. They are *presentations* of *real objects* to him; they are certain characteristics of those

[5] See Titchener: "Experimental Psychology or Thought Processes." In this notion of '*Aufgabe*' Titchener presents from the psychological point of view much that I here attempt to treat epistemologically. "In my belief, two ideas (we should say two phases of a single movement of attention) do, under certain circumstances, make a meaning. What are the circumstances? I hold that, from the psychological or existential point of view, meaning – so far as it finds representation in consciousness at all – is always context. (We use 'meaning' differently.) An idea means another idea, is psychologically the meaning of that other idea, if it is that idea's context. And I understand by context simply the mental process which accrues to the original idea through the situation (normal '*Aufgabe*', – see footnote) in which the organism finds itself, – primitively, the natural situation; later, either the natural or the mental." (p. 175)

objects. It is on this account only, that he is a *thinking* being, while the adding machine which he uses is not. In certain ways our mental life may approach the character of the adding machine's operations. We may, especially if we are of a certain type of mind, 'mechanize' our 'thinking', and regard symbols only. But so far as we do this, our mental operations cease to have the *thoughtful* character and approach the unconscious reflex. In such a case also, the symbols – certain sounds or marks – cease to be symbols and become truly our *objects*. So far as symbols are really *symbols*, they are presentations *of* something, and are, for the purposes of our thinking, integral parts or aspects of those real objects. In any other *Aufgabe*, the idea which regards them denotes nothing but so many sounds or marks. They are comparable to words in an unknown tongue or messages in cipher.

For every idea, there must be a presentation which is, in part, that real object which the idea denotes. Any idea which did not contain this intuitional presentation, would have no object, no meaning, – would not be an idea of anything. Every real must be at least imaginable, if we use imagination in a loose way to denote the possibility of a presentation which is intuitional in character. The round-square is unreal because it requires us to present to ourselves roundness and squareness in a relation which they cannot have for our 'representative faculty'. The non-Euclidean geometries are false because they require us to imagine a straight line which is slightly curved – or not to represent their constructions to ourselves at all. No experience could present us with this kind of complex.[6] The *idea* of the unreal because unrepresentable is not empty, – it contains certain presented elements, but the *purpose* to synthesize these in a certain way must forever be invalid, because the elements do not admit of such relations. Hence the unreality of the object which a purpose thus to synthesize intends.

The idea must contain a presentation which is intuitional in character. Only in intuition do we find those qualitative or specious marks by virtue of which we can identify an object in experience. On the other hand, if the idea contained *nothing but* this presentation, then there could strictly be no such thing as knowledge. *Knowing* requires not only that something be presented, but that it be *understood*. And so far as the presentation is the total content of the idea, such an idea would be speechless, lost in the contemplation of an indefinable. Nothing could be predicated of such an 'object' of thought, because it would signify nothing beyond itself and no relation to anything else would be relevant to its nature. The idea must also contain those contextual relations through which the presentation may be defined, or at least denoted

[6] See the Appendix on "Intuition and the Non-Euclidean Geometries." If read at this point, this discussion may aid comprehension of the rest of this chapter by exemplifying the position taken and illustrating it in the application to a concrete problem.

with an accuracy sufficient for the purposes of present thinking. We search here for uniform relations. Certain relations of the presentation to its given context we find to possess a uniformity for all experiences which is germain to our understanding of the object. Certain others must be supplied by the activity of our thinking itself.

A perfect knowledge could come only with the clear and explicit presence to mind of all the context which would be required for the clear and detailed understanding of the presentation. But no finite mind can hold so much explicitly before itself at once. To return to the example of the books arranged on the shelf: We cannot clearly discriminate all the details, by which alone we know the arrangement to be perfect, at one time. Accordingly there results a *movement of attention*: we 'run over' the books in a certain fashion, assuring ourselves of the relations of each book to it immediate neighbors. In this process, each book, as we discriminate it, is still regarded in its relations to all that portion of the collection whose order we have already surveyed, though the first books and their relations again belong to the awareness content from which they were in turn discriminated. We might speak of this as a 'secondary awareness'. It's different significance for knowledge – difference from primary awareness – is at once evident. It is distinguished by the fact that it belongs to a *synthesis which is maintained with each succeeding discrimination.*

We must pause for a moment to investigate the nature of this movement of attention. It is necessitated by the limited character of our 'field of attention', is maintained by our purposive activity and differs from the movement of the awareness moment. The movement of awareness is just that flux of things, indifferent to our purposes, which characterizes experience. It is not so baffling and subversive of our interests in knowing as Heracleitus thought, – unless, indeed, one be dominated by that purpose to abstract these characteristics and ignore all others which characterizes some minds. Yet it is not that transition or movement which marks the progress of thought itself. If it were, we should not need to be conscious at all, – as has already been noted. The uniformity our purposes seek would forever be presented to us. On the other hand, the movement of attention, in the sense intended, – the progress of thought – is just that kind of transition which marks our 'running over' the books. It subserves a *single purpose to know*, which, though it has its phases, has still its unity. Either one of these movements – of awareness or attention – may dominate the other. The movement of awareness may control, and then we have the turning of attention which 'disrupts' the process of our thinking and presents us with 'new' objects. Or the movement of attention may control, and then we have a purposive activity such as 'going to find out', my opening the book, or moving the object or my position relative to it. This activity has its significance for knowledge, but is not strictly the activity of knowing itself.

We are now in position to approach the problem of the relation of idea and object. For *the unity of the object is the unity of our purpose to know.* Certain 'concretions in experience', certain relatively stable wholes which are concerned by our 'everyday' purposes, are the 'real objects' of our commonplace thought, but these complexes have no peculiar significance for epistemology. The book, the shelf of books, a single page, the library; – each of these may in turn be the real object of one's thought. But no one of these, as real object, may be exhaustively presented in a momentary experience. None of these may be identified simply with one's present explicit presentation of it. However small or simple any real object may be, still its reality always transcends any particular experience of it. We never know any object in such a way that there is nothing further to be found out about it. It is an imperative of our nature as thinking beings that we so regard every presentation and every synthesis of such. For only thus do we secure the unlimited possibility of valid activity of knowing. The possibilities of reality, for knowledge, must be inexhaustible. Further thinking, further explication of a single purpose to know, can never be absolutely purposeless. However much we may have been active in thinking about any real, we may still be further active with regard to it. Moreover, experience in general, seems to validate this imperative, though with regard to any *particular* real, it remains – from the nature of the case – necessarily a postulate. Further thinking of *this* object is never absolutely but only relatively purposeless. It is purposeless because some other real 'demands our attention'. The further knowing of *this* real, under the pressing character of experience, is morally blameworthy.

The real object always transcends its presentation. The complete understanding of this presentation requires the complete satisfaction of this particular purpose whose unity is the unity of the real object. Thus the knowledge of the real object is demanded by the presentation of it. And this knowledge requires a movement of attention.

So far, then, as attention *has performed* its selection from the awareness and its synthesis of successive discrimination, the real object lies in the secondary awareness. It is distinguished, at every instant, from other awareness content by its significant relations to or coherence with the presentation of the moment. So far as this discrimination and synthesis *is being performed*, the real object *is* the presentation of the moment. So far as this is still *to be performed*, the real object lies still in the simple awareness, or belongs to further possible experience.

These two – simple awareness and further possible experience – should not, in this connection, be confused. Suppose, for instance, I set about describing a certain building. I add detail to detail, constructing it in my thought. But somebody interrupts and says, "And it has a tower on the north-east corner." "To be sure," I reply, "I merely forgot to mention it." That detail I have omitted to bring into my construction, though I was all along dimly aware

of it. So far as I readily accept these emendations with the feeling that it was merely an omission of attention, it is probably true that they were in some sense present to my mind. But suppose that one add, "And there is an egg and dart moulding just below the cornice." I doubt it, or admit that I shouldn't have been able to give this detail. Here is a limitation of my knowledge of the real object which is of a different kind. I know Memorial Hall in the sense that I can distinguish it from the Germanic Museum and the Boston Public Library, but not in the sense that my idea of it may ever exhaust its wealth of detail. I can adequately identify it only because all the possible variations of architecture are not presented in my experience. I know a certain book, but doubtless certain alterations of its contents could be made without my detecting them. I always recognize that *some* further details of my idea await further experience of an appropriate kind. When my synthesis of what is relevant to my purpose in the *given awareness* is *complete*, still the real object transcends my idea and can be known further only by some movement of the awareness moment – my going to see the building or receiving further reports, and so forth.

In what way, then, do these transcendent characters of the real object belong to the object at all, since its unity is that of the *purpose to know*? Obviously, they belong to it because the purpose is never completely fulfilled by present knowledge. But this does not distinguish them from *different* details which may not belong to the object. And this brings us to recognize another character of the real object. For the real object must 'hang together in experience' in certain ways. Not only does its unity belong to the unity of our purpose to know, but the *unity of this purpose prescribes certain relations which must hold, in actual or possible experience*, among the various parts and aspects of the object. If a presentation is to be understood, it must be referred to some object that is real for some category. In order to be real in any category, this object must be such that the presentation will be related in certain categorical ways with that which may be presentation in a further possible experience. The kind of unity, kind of relations, prescribed by our purposes to understand presentations, differs for different categories. Most easily, we can point out that 'tangible objects' must have a certain spatial unity; all their parts must stand in certain space relations to one another – must be spatially continuous. We may also easily note that it is this difference of categorical relations which distinguishes true report from fancy, memory from actual or physical presence. Presentations of these different kinds of objects cohere with further possible experience in different ways. Each of these categories is marked by a kind of unity of the object which is required if the object is to be real in that category.

But while it is thus true that only possible experience can determine whether a presentation is of an object which is real in a certain category, yet every intuition is the presentation of an object which is real for *some* category. The

content of a false report does not have those relations to possible experience which would belong to it if it were *true*. But it is real as the *content of a false report*. I see before me on the paper a thin, curling, dark somewhat. I brush at it; it offers no resistance but remains. My eraser makes no impression on it. I move my eyes and it moves with them. Now I *understand* it: it is the after image of the electric light film. It did not have the *kind of relations* in my experience which would belong to a hair resting on the page, or to a pencil mark. But it has the kind of relations which go with it in experience of phenomena of the class to which I now refer it.

Whatever given is unreal, is unreal only *relative to the purpose to understand it in a certain way*, to so attend it, as to discover relations of a certain *kind*, which it would have, if real for that category, in possible experience. It is unreal for the purpose which seeks a certain kind of coherence in the object. Relative to some purpose to understand it in *some other* way, it must be real. Some other kind of relations to further aspects of a real object, it must have, for actual or possible experience. For the class of real objects to which it is properly referred, there must be a certain kind of coherence of various aspects or parts of the real object. The purpose to *understand* the presentation of any object, is the purpose to apprehend it in such categorical relations as it may have. *From the point of view of this purpose the presentation implies these relations of it. And these relations, again, imply those further characters, parts, and aspects of the object which are so related to the given presentation.* From the point of view of the present, these further characters, parts, or aspects are variables. The other side of the house may vary in many ways and yet be regarded as the other side of this real house. But they are limited variables. *Whatever else* the other side of the house may be, it must be *such that* it may have certain relations – spatial, for example – with that which is just now the explicit presentation of the house. It is limited by the necessity for these relations to the presentation. The presentation – as presentation of a real – must be understandable, which means that it implies other aspects or parts, standing in certain relations to it. *The real is, then, not simply the given, but the given plus that which the given implies in order that it be intelligible.* The real object must be intelligible. And the intelligibility of the real object means its transcendence of our presentation, our present experience, of it. It is thus that the present experience always implies something beyond itself. So far as the real object transcends my present experience of it, it is *whatever* stands in certain relations with this present experience.

This 'whatever', so far as it does not become that which is immediately next attended by my purpose to understand the given, is referred to an at least ideally possible experience. The qualification of 'ideal' cannot be omitted. Atoms and molecules, the other side of the moon, and the planets beyond Neptune cannot be presented in experience save in very fragmentary fashions. And if I recognize my limitations as an individual, the short span of my life,

and so forth, by far the greatest part of what is implied if my few experiences are to be intelligible is not possible experience for me. These limitations, however, while they are limitations of my finitude, are not the limitation of my finite *way of knowing. By possible experience, I must mean, then, that there can be, in the nature of the real objects, nothing which transcends my way of knowing and of identifying objects in experience.* Otherwise the postulate of the transcendent real does not in the least secure the intelligibility of my presentations, and thus – being no longer the postulate of the intelligibility of the given – is entirely gratuitous and unmeaning. The real objects as transcendent, is not such that it has another *kind* of reality from that intuitional one which I apprehend in the presentation of the object. *It is essentially something which would have that intuitional character – by which alone anything may be identified in experience – for any finite experience which could conceivably reach it.* If we can speak of knowledge of transcendent objects which could not appear in possible experience, such knowledge can have meaning only in reference to that which is not transcendent, only in reference to those presentations which imply its existence for their own intelligibility. The planets beyond Neptune are real only as implied by the perturbations of Neptune and other heavenly bodies: the other side of the moon is real only because the moon, as experienced, behaves like a solid body of a certain mass. The conception of any transcendent object can denote as its object, or identify in experience, only certain abstracted aspects of the objects of experience, or some representation which the mind creates in terms, finally, of intuition.

The real object, as object of ideally possible experience, means, further, that no experience may contradict this reality by finding *nothing* in those relations which imply it. No experience could come upon, here, either emptiness or an incomprehensible somewhat. We *know* the object, so far as transcendent, only as an 'X', a limited variable in certain relations. But we necessarily postulate, when we postulate the intelligibility of experience, that it *is not* a variable, but is a specific determination or value of that variable. We *know* no object, save as some aspect of it is presented to us in experience. And so far as this object, as real, is transcendent of our experience, still it must have this character of being schematically representable as that which stands in certain relations to what is given, and would have, for any experience which might reach it, the same intuitional or identifiable nature which characterizes present experience. This is the further specification of the statement that the real is the given plus that which renders the given intelligible; and this exhibits, in brief, the place of intuition in our knowledge of real objects.

But we are not yet ready to leave the problem. Though every part and aspect of the real object *is* identifiable only by some specious, qualitative characteristic, it is not at all certain that these 'indefinables' are essential to knowledge except in a functional way. It may be that the *particular* character

by which I identify anything may be entirely insignificant except in so far as it enables me to make the identification. Intuition may be germain to knowledge only because, as feeling beings, we must identify objects by their 'feels'. In what sense this last statement is correct, we have already discussed. We may further ask what the significance of these intuitional characters is for 'the world which we know in common'. If to be real means to be 'valid for all possible subjects', this problem may assume importance.

If the specific character of two colors were interchanged for the next child born, could it make any difference for his knowledge? Have we any assurance that, in general, the specific character which, for me, belongs to sounds may not, for you, belong to colors? Indeed, it seems impossible that the world should have the same specious characters for all of us. Your eyes are good; mine are astygmatic. My sense of smell is acute; yours is almost entirely lacking. You can distinguish three dimensions of feelings; I fail in every such attempt. You are short, and I am tall. If now we both see the object which is well across the table from us, not only is the sight impression different – we could not here allow that difference as significant; not only is the coordinated muscle sensation, or the feeling of reaching it, different – that also is unimportant – but the total presentation from which the psychologist abstracts these elements, our idea of that distance or space, as intuitional, cannot be the same. And this may be true though we act about it in the same categorical way. We may all be color blind to each other and never know it, merely because we distinguish approximately the same number of color variations. Our smell and taste and hearing are at least 'variously susceptible'.

The irritability with which such considerations as these are frequently met, I cannot help attributing partly to the fact that their lack of significance in epistemology is not usually accounted for. They are dismissed as trivial. Yet if they are trivial, that fact itself is significant of the role of intuition in any knowledge of the world that we hold in common. It points to the primary importance of a correspondence of our *ways of acting*, for only here can we discover surely the ground of common knowledge. If the colors, considered as specious intuitional qualities (which are indescribable save in some order) were not the same for you and for me, they would yet have the same significance for knowledge if our ways of acting towards them, schematizing them, were the same. But if what are distinct specious qualities for me remain identical for you, then our worlds will so far differ, because our ways of acting will differ.[7]

[7] Cf. Leibniz, "Discourse on Metaphysics", Prop. XIV, demonstration: "Nevertheless it is most true that the perceptions and expressions of all substances intercorrespond, so that each one following independently certain reasons or laws which he has noticed meets others which are doing the same, as when several have agreed to meet together in a certain place on a set day, they are able to carry out the plan if they wish. Now although all (the

And this may be the secret of the fundamental importance of that schema which is itself the order of our activities – temporal succession.

In order that we may have a world in common, certain basic relations of things – some basis of schamatization and determination in general must be the same for us, – the same not in specific intuitional character, but the same in the sense of *identification with the same category*. You must find a relation where I find, one, so far as we know the same reality; and your relation and mine must belong to the same category, to the same system of relations. For each of us the secret of this classification will necessarily be something intuitional; no other ground of identification is possible. But that is not to say that their specific character need be identical for both. Furthermore, if you are to find a relation where I find one, you must be able to discriminate what I discriminate. What are, for me, different qualities or aspects in experience cannot be identical for you. If they are, I shall *discover* your limitation, because your way of acting in the presence of this experience will be different from mine. The significance of the qualitative, intuitional character of experience and of objects for knowledge that may be called common lies only in its being the ground of analysis and synthesis, the ground of the categorizing of experience.

This, then, is the place of intuition in knowledge: It furnishes us with that material of thought without which our thinking activity would forever be empty. As the specific character of the presentations of objects, it is that by which alone any idea may, even partially, identify its object in the experience of the moment. As the given, it is in connection with the necessary postulate of intelligibility, the basis of our distinguishing the real from the all which is conceivably possible. Inasmuch as we seek to understand this given, it sets us the problem of determination or sufficiently adequate predication. Such determination, again, must depend finally upon intuition – upon such basal uniformities of relations as are given in experience. Not only does intuition give the only possible denotation which the idea may have in present experience, but so far as the object transcends our present experience, it still must have – as an object in its essential nature intelligible to our finite way of knowing – the character of intuition. The limits of intuition are the limits of intelligibility. Yet this significance of intuition for us still lies, at every step, in its connection with our purposive activity; only by regard for the intuitional characters of experience can we be guided in our logical ways of acting. Without our activity, intuition has no significance; without intuition, our activity has no ground or meaning.

individual perceptions) express the same phenomena, this does not bring it about that their expressions are exactly alike. It is sufficient if they are proportional as when several spectators see the same thing and are agreed about it, although each one sees or speaks according to the measure of his vision."

PROFESSOR SANTAYANA AND IDEALISM

C. I. Lewis. "Professor Santayana and Idealism." *University of California Chronicle* 14.8 (1912): 192–211.

Idealism is a general term applicable to a fairly wide range of philosophic doctrine. Berkeley holds that "to be is to be perceived." The position of Plato may perhaps be summarized in the statement that "to be is to be *con*ceived; the flux of sense perception is deceitful, and the real is transcendent of experience." For Kant, the object of knowledge must be both perceived and conceived: conception without perception is empty; percepts without concepts are blind. Fichte asserts that the real is the valuable; Hegel, that the real is rational and the rational is real. These campaign banners can hardly be got to march all in the same procession. It results from this divergence of doctrines that one may possibly refute Idealism with a capital "I" without hurting the feelings or damaging the arguments of anybody in particular. Whoever attacks Berkeley's position may be hailed as a comrade in arms by those who follow the Platonic tradition; while he who assails Plato's abstract ideas will do a real service to Neo-Kantians and Hegelians. But one who determines to annihilate Idealism in general is likely to waste his ammunition on a straw man, while his real opponents are outflanking him right and left.

This stalking Idealism in effigy has latterly become a favorite pastime. Certain philosophic writers in this country find it easier to play at refuting Idealism than seriously to attempt a construction of their own.

Professor Santayana, however, has not been one of this number. The spirit of his opposition is somewhat different – not directed so much against any particular thesis which he supposes all idealists to hold in common, but aimed rather at the general trend of idealistic thinking. You remember the Athenian who voted to banish Aristides because he was tired of hearing him called "the Just." Professor Santayana casts his vote against Idealism because he is wearied of its gentility. His poetic soul is sated with its eternal validities, and its protagonism of higher values. He finds its ethics "conventional and verbal," its morals "trivial and sanctimonious – based on authority instead of human nature, with salvation rather than happiness for their goal." It provides a cloak for superstition and allies itself with myth-making theologies. The separate charges in this arraignment cannot, we hope, be substantiated. Indeed they constitute an expression of sentiment rather than assertions to be proved or disproved. But this feeling that Idealism has become infected with

the germ of respectability, has even prospered too much and waxes effete and enervating, is probably not confined to Professor Santayana, though he has put it rather strongly. The fundamental insights of philosophy, like those of religion, ever require new and more vital forms of expression. There is, perhaps, this much of justice in Professor Santayana's attitude – that Idealism stands today just a little in need of fresh and vigorous restatement, shorn of all obsolete phraseology, and fully abreast of the best scientific and religious thinking of our time.

Such restatement is not, however, altogether wanting; and even if it were, that would constitute no excuse for denying the validity of the idealistic position. It is significant that Professor Santayana does not hold that the fundamental tenets of Idealism – unless it be Berkeley's – are false. On the contrary, transcendentalism is "true but trivial." I quote from the first volume of the *Life of Reason*: "It was a thing taken for granted in ancient and scholastic philosophy that a being dwelling, like man, in the immediate, whose moments are in flux, needed constructive reason to interpret his experience and paint in his unstable consciousness some symbolic picture of the world. To have reverted to this constructive process and studied its stages is an interesting achievement (he refers, of course, to Kant); but that construction is already made by common sense and science, and it was visionary insolence in the Germans to propose to make that construction otherwise. In the heat of scientific theorizing or dialectical argument, it is sometimes salutary to be reminded that we are men thinking; but, after all, it is no news."

This sounds persuasive; but if one conceive that there is anything really at stake, it is hardly convincing. It is not at once obvious why it is insolent to state explicitly what is already implied in science and common sense. One might suppose this to be the function of philosophy. If Kant's fundamental insight – which the passage quoted burlesques just a bit – is "no news," why treat Kantian doctrine as a view opposed to one's own? That one is bored by trivial truths is no excuse for serious disagreement. Moreover, it seems pertinent to ask how, if the primary principle of Idealism is true, the Naturalism which it controverts can be also true. The fact is that Idealism draws from this main premise certain consequences which Naturalism finds it convenient to omit. If we need constructive reason to interpret our experience, then at least experience needs interpretation, and the only interpretation possible is that which is made in the light of constructive reason. The conditions, further, which reason in its constructions imposes upon the object of thought must apply to all reality which is intelligible. And so on: – I hesitate to bore you further with the consequences of this "trivial truth," especially since they are already familiar.

Naturalism is not primarily a positive but a negative doctrine. It does not seek to expand our knowledge of realities so much as to correct certain

errors and to limit the field of significant truth and our method of attaining it. For Naturalism, the limits of knowledge are the (ideal!) limits of natural science, and the realm of knowable reality is bounded by causal and mathematical explanation. Anything further would be myth and superstition – or mere verbiage. The only laws of reality are those of mechanics and mathematics, with their derivatives. The laws of constructive reason, you observe, are forgotten in this enumeration. The naturalist may be a materialist and reduce the cosmos, life, mind, thoughts, purposes, and ideals to a concatenation of atoms and molecules, distributed according to the laws of motion. Or he may feel that the hypothesis of molecular matter smacks of metaphysics, and prefer to remain agnostic with respect to the substrate of reality. He seems then to be confined to the assertion that the world is full of a number of things; for further particulars consult the encyclopedias of natural science. His philosophy seems reduced to the aphoristic type, a series of wise observations about life.

Idealism, on the other hand, does not deny the validity or importance of scientific description. Instead, it insists upon it. Idealism does not even deny the reality of matter, the popular supposition to the contrary notwithstanding. Of course, if one mean by "matter" a something-I-know-not-what which is totally indescribable save as that in which qualities inhere, we must deny it. But science has no interest in such a supposititious substance, because it would explain nothing. The matter of science may be represented under a variety of forms, some of which are possibly true hypotheses while others are merely ideal constructions for convenience of treatment. The three dimensional continuum of mass points is of the latter type. The physicist no more supposes that force can be exerted upon a single mass point than he supposes that the weight of a lever can be concentrated at its center of gravity. The mass point is merely a convenient symbolism which simplifies the procedure of mechanics. The question whether mass points actually exist, or how space can be filled by indivisible and non-extended entities would, consequently, be meaningless. With atoms and molecules the case is different. There is no reason, except some advanced by scientists themselves, why a single molecule or atom may not be as real as an alum crystal or a drop of water. That no one can have any direct experience of a single molecule is no objection to their reality; the same may be said of the other side of the moon. To be sure, the scientist himself is likely to regard atoms and molecules either as merely ideal constructs, like mass points, or as at least hypothetical and doubtfully real. The reason is not, however, that no one has directly experienced them, but rather that not all the phenomena of which physics and chemistry treat are readily explainable on this hypothesis alone, and that, in any case, other possibilities are equally conceivable. But if we were once sure that no other hypothesis would explain all the facts, while this one would, both science and idealistic philosophy would confidently assert that atoms and molecules are

real. Reality must be through and through intelligible – that is a fundamental thesis of Idealism. If physical and chemical phenomena were inexplicable save on one hypothesis, then that hypothesis must be true. Idealism stands ready to insist upon the existence of matter, if by matter is meant anything which is *itself intelligible* and is required for the truth of science.

This digression with reference to the matter of science has been necessary in order to avoid misunderstanding. For I now have to say that Idealism would deny the existence and the possibility of that "matter" which figures in Professor Santayana's philosophy. The term "matter," he tells us, has two meanings. One, the scientific, you are familiar with. The other, which he calls the "literary or philosophic" meaning, is the sense in which he uses the term. When he styles himself a materialist, he intends no reference to atoms and molecules, mass points, or ions or electrons. The matter in question is a modification of Aristotle's ὑλς or stuff. It can neither be described nor adequately characterized, for reasons which will appear. But its function, as Professor Santayana represents it, is clear.

There is a difference between the idea or definition or essence of a thing (Aristotle's "form") and that thing's existence. This difference is one with respect to matter. Some essences are materialized; others are not. This is *not* the difference between thought and external reality, with which it might easily be confused. For a thought, too, is materialized when some one has it or thinks it. The distinction is, rather, that which holds between actuality and mere possibility – between the third dimension and the fourth, between you and your twin brother, between the thought which somebody thinks and one which somebody *might* think. The merely possible lacks *matter*; the actual has it or is constituted by means of it. The actual is, then, the conceivable or merely possible – the essence – plus matter.

The distinction thus indicated between essences and existences is, of course, a valid distinction. The question why some things exist, while others which are equally conceivable do not, is one which it is permitted anybody to raise – and answer if he can. But the problem is not solved, or even rendered intelligible, by saying "matter." "Matter" then becomes only another name for the problem.

The difficulty with this matter is that it can never be pried loose from the essences in union with which it exists. This is the more troublesome because the essences can readily be separated from matter. The merely possible – e.g., a piece of furniture you would like to have made – is still conceivable or definable. It has a definite nature. You know what you mean, though you do not find it in experience. This desk is the union of its essence with matter. We can separate out in thought its essence – as it was for the person who planned it – from its existence. But when the essence is abstracted from its existence, the matter of it seems utterly to disappear. Do I hear some one murmur "planks"? No, the planks from which the desk was made, or the kindling

wood into which it might be converted, are different from the desk. They are not the matter of the desk, but instead, the union of a different essence with matter. When we divide in thought the essence from the matter of the desk, we cannot conceive or describe the matter. It seems utterly to have lapsed. Essences by themselves are conceivable; matter by itself is not. Not only is this matter nowhere to be discovered out of combination with some essence, it cannot even be imagined. Unlike the matter of science it has no particular nature or properties, has no place in space or time, and is totally incomprehensible. Necessarily so, since to describe it or define it would be to give it an essence – a definition or idea – which *qua* matter it cannot have. Matter is the universal dough which lends itself to every shape, but has no shape itself. It is the great Nothing-in-particular.

It looks a little as if Professor Santayana intended us to think that he has solved the problem of existence by conceiving the inconceivable. As a fact, he has only given us a name which names nothing and has no meaning. His "matter" neither explains anything nor can be itself explained. He has indulged a little in that mythology which he attributes to Idealism, has called attention to a problem – probably an insoluble one – and then escaped into the realm of poetic fancies. We admit the problem, but we cannot seriously follow him. The possibility of such an incomprehensible substance as he offers us is automatically ruled out by that trivial truth of transcendentalism that we can and must interpret experience in the light of constructive reason: that it is meaningless to call anything real whose nature we can never understand.

This discussion of Matter as it appears in Professor Santayana's doctrine lies somewhat aside from our main theme. His materialism is *sui generis*, and its difficulties are not those of ordinary materialism, which intends to assert that all reality is made up of atoms and molecules, or energy – the matter of science. With reference to this doctrine, the attitude of Idealism is clear. The idealist may grant and even insist that matter is real, but he emphatically denies that the real is matter. There are other elements and phases of existence. We disagree with the materialist because he would restrict unduly and falsely the realm of the real and the true. It is the same objection which we would bring against Naturalism in general. Indeed, the materialist differs from other naturalists only in his understanding of science itself. For him, the elements in terms of which phenomena are explained by science are the fundamentally real things; for other naturalists it is the phenomena explained, rather than the elements into which they are analyzed, which are ultimately real.

So long as the naturalist is merely enunciating scientific truth, or even scientific hypotheses, Idealism has no quarrel with him. He is seeking to render some department of experience intelligible and to control nature in the interest of humanity. In this, the idealist, like every other sane person, should be his well-wisher and co-worker. It must be admitted that an idealist here

and there has sometimes failed in this respect to be true to his principles, and some have even sought to make capital out of the difficulties of science in its attempt to formulate self-consistent and sufficient hypotheses. Such an attitude is not only captious but subversive of the interests of philosophy in general and of Idealism in particular. We have nothing to gain by taunting the scientist with mistakes and difficulties within the field of science itself.

This statement must not, however, be taken as an admission that philosophy has not the right to call attention to the limitations of science. Natural science inevitably imposes certain restrictions upon itself. It confines its problems; consequently its solutions are equally circumscribed. Its business is to describe and to analyze; consequently its truths are such as can be discovered by analysis or set forth in descriptive generalizations. Science cannot take the place of philosophic thinking. The anatomical analysis of Nature into configurations of atoms, or the generalization of its metamorphoses in the laws of motion, is not the whole truth of Nature. Nor can the description of a brain process in physiological terms be the whole story of thinking or of the will act. There still remains the truth as to the validity of the idea, the rationality or irrationality of the will act – the truth of evaluation, of purposes and ideals. There still remains that truth which interests one who would take an appropriate attitude toward nature in general – its submission to or subversion of human interests, its kinship with our ideals or the opposite. If one choose to use a much misunderstood term, one may say that there is a truth of final causes, over and above – though never contradictory of – the truth of the efficient causes with which natural science deals. The scientist sometimes fears, I think, that final causes are intended as a substitute for further scientific investigation and description. This is natural; the word final suggests that the evidence is all in and the account closed. He suspects that because science leaves the development of the egg into the complete organism somewhat miraculous, we intend to explain it by saying that Nature is seeking to reproduce a certain form. If the term ever had such a meaning – and of this there is some doubt – at least it can have it no longer. The right of description belongs wholly to science. The facts which it is able to furnish us may leave much still uncomprehended. But that which is not yet causally understood can never be made intelligible by merely verbal explanation, or by the mere attribution of "purposes" to Nature.

Suppose, however, the entire process in question were adequately described and reduced to natural law. It is still miraculous, is it not, in the sense that it is wonderful. It is wonderful that the laws of development are what they are. It would be equally wonderful if they were otherwise and worked out different results. It is wonderful that Nature obeys laws at all – that it is uniform in such fashion as to enable science to describe and predict. That Nature seems to have in general that trend which we call upward, because we find that it more and more approximates to our ideals, is in this sense miraculous. If the world were

continually defeating human ends in greater number and more grievously, science could still go about its business of describing phenomena and discovering laws – unless, of course, the cosmos began to slough off its uniformities and become chaotic. It would then defeat the ends of science.

The whole truth about Nature is not told until it has been evaluated, measured by the standard of purposes and ideals. That it should have one value rather than another, that progress should be real instead of retroversion, that life is worth living or is not – these are significant truths not contained among the descriptive formulations of science. That there is no corner of the universe whose phenomena are not ultimately reducible to law, that the logical consequences of observed facts will themselves be observable facts, that the inductive method will continue to find itself validated by the processes of external reality – this conformity of the universe to the ideals of *science* is something which science itself can never demonstrate. It must take this conformity for granted before it can set up in business. These are the presuppositions which represent the faith of the scientist – his belief in the validity of his own thought processes and of his rational values.

That there is a truth of final causes means no more than this: reality can be completely understood only when it is viewed in the light of some end or goal – in other words, only in terms of values and ideals. This does not limit the nature of truth so as to exclude any even possible scientific account, because scientific thinking is itself one of the ways in which we seek to realize ideal ends and to control Nature in purposive ways. This is its only excuse for being. Science is engaged in converting the unintelligible into the intelligible and conquering our somewhat chaotic experience in the name of Reason. Science finds its beginning and end in ideals. Its truth is significant because it is valuable. The truth of values includes the truth of description; the truth of description does not include the truth of values. Hence Idealism includes Naturalism so far as Naturalism means the positive assertion of scientific truth, and parts company with Naturalism when that doctrine denies that there is any *other* truth.

But the naturalist here raises objection. He, too, deals with ideas and values; only his method, instead of being transcendental and verbal, is scientific. Thought processes are phenomena as much as chemical reactions; social institutions and ideals are as much the product of discoverable causes as are the phases of the moon. They have their laws, and are more or less predictable. Barring their somewhat greater complexity, there is no more difficulty in explaining mental and moral facts than there is in a problem of mechanics. Indeed, the mental and moral will probably some day be shown to be merely mechanical.

Here again it is necessary to guard against misunderstanding. Idealism does not deny that mental and moral phenomena can be causally explained. It is sometimes said that natural science cannot account for conscience, or for

morality, or for our artistic sense, or our civic ideals. With reference at least to morality, even Huxley, otherwise a consistent naturalist, has taken this position. But such a statement is misleading, on account of its ambiguity, and should be avoided. Science can perfectly well account for the *appearance* of our moral and social sentiments and for their *development* along with other phases of civilization.

The division of labor is a means to efficient dealing with environment. It enables the same energy to produce a larger result – more food, better clothing, deadlier weapons, and so on. The group which adopts it will, when brought into competition with a group which does not, or with isolated individuals, be bound to win. It will be wealthier, able to support larger families, will thus become the larger group and overcome the other by sheer force of numbers if in no more direct fashion. And the division of labor is only one among many practical advantages of social solidarity. Organized society means, however, just that abstention from certain kinds of competition – illegal and unsocial acts – which Huxley and some others take to be a controversion of natural processes. But the existence of the successfully integrated social group is possible only through the moral conduct of its members, and the natural processes which bring it about are quite analogous – though more complex – to those by which crystals are formed in a solution. Moral conduct is produced by natural processes in the same way as stronger bodies, better organized brains, and keener sensibilities.

One may object that the processes of Nature can indeed produce more appropriate reactions on the part of the organism, conduct which looks like and works like morality, but not necessarily moral feelings or a conscience. These are still unaccounted for. But the answer is obvious. A hen that liked the feeling of its head under water or had an insuperable aversion to pecking grain would never transmit these characteristics to any progeny, while fowls which felt better with a full crop would naturally flourish. Just so, if the advantages of organized society be granted, Nature will select those individuals and strains whose sentiments are compatible with group order and efficiency. Specific feelings are uniformly conjoined with certain stimuli and certain reactions, or perhaps with the coordination of the two. Whatever accounts for the organism's reactions also accounts for its feelings, in the sense that it discovers their uniform antecedents and accompaniments.

Science – anthropological and biological – offers the only possible explanation of the fact that those reactions which we call moral or artistic or logical are increasingly present in surviving human organisms. And the business of tracing the causal antecedents and physical accompaniments of moral sentiments and intentions, or of artistic perceptions, or logical decisions, belongs solely to the physiological psychologist. It may be true that, so far, psychology has had but indifferent success in its attempt to reduce the phenomena of will and judgment to law. But with those who would deny the possibility of

causal explanation in this field and make its facts entirely miraculous, Idealism has no more sympathy than has Naturalism. These objectors, if there be any such, are merely trying to turn back the wheels of progress and substitute mythology for science.

The attitude of modern Idealism on this point is unambiguous. It faces, with Kant, the problem of discovering what validity can attach to moral and religious values, consistently with the entire truth of science in the realm of phenomena. It cannot retract or qualify its assertion that all facts are to be understood. The time is long past when one may rationally suppose that the realm of phenomena contains odd corners to which science can never penetrate, or that the natural sequence of events is interrupted every now and again for the intrusion of a miracle. The divine can no longer be simply interpolated in the natural, the ideal artificially grafted upon the phenomenal. Or, if this is an error, and the natural is shot through and infected with the miraculous and scientifically incomprehensible, then the idealistic interpretation of reality is as much beside the mark as that of Naturalism. Both demand that the category of causality be applicable to whatever appears in space and time, applicable without exception. Neither would argue that the phenomena of religion or morality or art must be incomprehensible to science.

Since Naturalism can at once incorporate in its programme the results of natural science, the difficulty of Naturalism is not to account for the *appearance* of mental or social phenomena; it is to account for their *validity* that gives the scientist pause. That I should have the idea that I see an audience, or that the audience should feel uneasy in their present predicament, or that any other mental phenomena should occur in conjunction with particular brains, the psychologist may explain. Given sufficient data as to the nervous systems concerned and the stimuli impinging upon them, he should be able to predict these facts. But that the idea should be *true* or the feeling *justified* is an entirely different matter. Strictly, the scientist can offer no explanation of the validity of ideas or feelings simply because it is not his business. When he has shown how the thing comes about, has demonstrated that it occurs according to the laws of his particular science, he is done with it. Veridical perceptions and hallucinations, humane sentiments and moral perversions, poetic fancies and insane obsessions – all these he explains by the same laws and shows that they supervene with equal necessity upon their causal antecedents or physical accompaniments. That one mental operation is knowledge, another error, or that one motor impulse ends in right action, another in crime, does not in the least concern the psychologist, except as they reveal different conditions of nervous tissues or different stimuli. The truth or falsity of an idea, the rightness or wrongness of an intent, are, in the last analysis, judgments of value. That one is better and another worse, the descriptive scientist, merely as such, has no right to decide. As a *man*, he *must*; but that would signify nothing if it merely betrayed the workings of *his*

nervous system. Anyone may decide that his own brain mediates a judgment antagonistic to another's, but that does not discover any right or wrong, better or worse, except from the purely personal or subjective point of view. It discovers merely that one likes something or believes something. The objective validity of judgments and evaluations remains entirely problematic.

It is equally true of the sage, the insane person, and the pig that they have their beliefs and preferences. Who shall deny to the pig that raw potato is an end in itself and infinitely more valuable than wisdom? Why labor with the patient's delusions when one only pits one's own nervous system and its workings against another? This is a very old string I am harping on, but the argument is still as sound as when Plato directed it against the Naturalism of his day. Whoever would tell us that the *only* pertinent account of ideas and feelings is description in causal terms places himself at strange disadvantage. For one may reply: "I admit your contention, for the moment, and accept your argument and conclusion at the value which you yourself put upon them. Your brain – save the mark – is different from mine, or else subject to very different stimuli. I now understand why you hold such a strange philosophy. You inherited that kink in your gray matter – or it may be due to something you ate for dinner. Have you ever tried whiskey for it? That sometimes produces a new set of ideas and values." Or one may say, "The air waves from your vocal organs produce in my nervous system a disagreement with you. That is the whole truth of the matter." If validity is a matter of causation, all ideas and evaluations are equally valid, since all are equally caused.

The naturalist seeks to evade this issue. He points out that since man and Nature have evolved together, man finds himself – his nervous system, his beliefs and values – such as harmonize with the cosmos which has produced him. If it were otherwise, he would be quickly cut off, and his particular brand of truth would have no representatives. But while this is true on the whole, it admits of continual exception. No individual organism finds itself in perfect adjustment to environment. (We may remark in passing that the very idea of adjustment involves categories of value; every organism is equally a fact when and where it exists, and while it remains, all forces involved are equal and opposite. Again, values aside, why should evolution mean the survival of the *fittest*?) In any case, maladjustment persists along with adjustment; and the individual mind will, on that showing, always be a curious mingling of truth and error. This, you say, is no vital objection, since it is an obvious fact. Admittedly; but it points out nevertheless that objective validity is not secured to an idea because evolution has produced it. Moreover, each separate nervous system has equally been evolved by the processes of Nature, and accordingly, if the argument proves anything, it proves that all brains are equally good truth producers. Any attempt to escape this consequence will inevitably appeal, in the end, to some judgment of values. And the objective validity of these values will be presupposed. The naturalistic account must

appeal to that which Naturalism can never account for. The naturalist, if he explicitly states what his doctrine implies, becomes an idealist.

In this day and age, however, the naturalist further amends his position. Since all ideas are merely somebody's beliefs, and all evaluations somebody's preferences, he recognizes the impossibility of any absolute objective standard. He even prides himself a little upon this catholic point of view, and reviles the dogmatist in proportion. The truth is at best a name for the hypothesis that works. He sets up his ideas alongside Nature and contents himself with observing how Nature treats them. Perhaps he is even willing to set up *this* truth which he has just announced and observe what happens to it. We all have spells of wondering if Pragmatism will work.

But the naturalist, now turned pragmatist, is deceived by the vagueness of his own terminology. Even he is sometimes worried to know just what happens to an idea when it gets verified. It meets an experience which satisfies it, perhaps. But this phraseology is more blind than the first. The whole problem is to know how and in what sense experience can satisfy or refuse to satisfy an idea. The problem is real; the pragmatist does not solve it but only leads up to it and says, "Tag; you're it." The really important question is to know what is meant by an idea or a hypothesis "working." Attention will disclose that the pragmatist uses this word in a variety of meanings. A hypothesis in religion works when it makes you feel good. The idea of an all-seeing power that makes for righteousness works when it leaves you free to take moral holidays. So far it is true. A physical hypothesis works when you can deduce facts from it. Logic says that the hypothesis is thus rendered more or less *probable*, and reminds us that the truth may often be deduced from false premises. But Pragmatism asserts that if the hypothesis gives you the facts, it is so far true. Truth is only probability. Even the laws of probability are only probably true. Or more accurately, *probably* the laws of probability are only probable. It is probably best not to pursue this line of thought too far.

In general, an idea or hypothesis may be said to "work" when it is useful. This is the really important point. But usefulness is obviously a predication of value. The idea works if it is found to be valuable. However, it is just the objective criterion of value which the naturalist has failed to produce. By this excursion into Pragmatism he has only got himself into a vicious circle. In order to prove that our privately owned ideas and ideals have any value, it is necessary to secure their objective validity and truth. To the question "Has the idea which is simply the necessary result of a brain process any value?" the naturalist answers – as everyone must – "Yes, if it is true." But to the further question, "Is it true?" he now answers, "Yes, if it is valuable." If we simply assert the identity of truth with the valuable, we must remember that the account of the valuable from which the naturalist starts is that somebody likes it. And he has not got any further. Finding that he cannot bring subjective

feelings and ideas up to any standard of objective truth, he now calls upon us to bring the standard down to the feelings.

He has, it is true, another method of dealing with ideas and ideals. We are social beings, and find ourselves more or less in agreement. Our beliefs and sentiments are not merely subjective, because they are shared by others. Indeed, it is just the error of idealistic ethics that it is based on authority rather than that agreement which we find among men because of their community of feeling. Right and wrong, good and bad, must be decided by counting noses. Charity and head hunting are equally right in the communities which sanction them. The idea is not new: the Sophists invented it.

The real difficulty with Naturalism is not that it is too catholic and democratic, but that it is not enough so. If it would arrive at an objective truth and an objective standard of values, it must seek it in the very roots of human nature. Idealism appeals to authority, but it finds that authority is an agreement which leaves *no* nose uncounted – in the common rationality of mankind. Its initial premises are merely that the real is intelligible and that the truth is free from contradictions. In Ethics, its arch principle is only the law that there shall be law; that right conduct must be rational conduct, and that good wills can never find themselves really at cross purposes. One must so act that he can will the principle of his action as a universal law of conduct. One must seek his happiness by means which do not contradict the possibility of happiness for all. One must so think that the logical consequences of his idea do not contradict the idea itself.

These are no merely subjective standards, though they appeal to no external criteria which are not found in the subject of thought and action himself. They are ideals to be realized in the process of becoming what one means to be and attempts to become in every rational thought and action. Yet the realization of this goal is an infinite task – the vocation of humanity. The truth and objective value of these standards is revealed in the fact that to deny them or refuse them is to contradict one's self, and make life a meaningless muddle.

My task tonight is a rather limited one. If I should attempt further to reinstate Idealism, I should inevitably trespass in fields that belong to the further discussions for the year. Perhaps I have done so already. But I should like, in closing, to say just a little about the general method of Idealism. We are often accused of being dialectical and attempting to catch the adversary in purely verbal contradictions. But, after all, if we are to have any philosophy at all, it ought to be able to state itself without saying what it doesn't mean. Common sense is a good enough formulation of near truths to worry along with. To be sure, even this common stock is the accumulated wisdom of ages. It must have begun as a hard won truth which gradually seeped through the social medium. Common sense is inherited philosophy. Our present business must be to remove contradictions which remain, and state explicitly, if we can, that which is implied in common thought and action.

Because he has this faith in the common rationality of mankind, and believes that every thought and deed means to be intelligent, your idealist is the most presumptuous of men. He supposes that if you let any view develop its own implication and discover its own presuppositions, it will, in the end, assert that the real is rational – that the laws of constructive reason are the universal determinants and the framework of all that is knowable. It will find itself, after all, in agreement with the main thought of Idealism. Either that, or it will fall into contradictions which it cannot solve. Hence he favors letting every view have its say. Its truth will remain, while its errors will hang themselves in contradiction. Like Socrates of old, he is discouraged only when the opponent refuses to take himself seriously and avoids argument by calling names.

If it be natural science that is in question, he finds that the idealistic premises are inevitably presupposed. Science affirms the sovereignty of Intelligence over Nature, and is itself a process by which Reason takes possession of its realm. When science supplements itself with the statement of what it implies, and what it seriously means to do and be, it becomes Idealism.

Every doctrine must finally assume an absolute truth and an objective standard of values, simply because every view means to be *itself* absolutely true and universally worthwhile. These trivial truths are in themselves the only answer necessary to that Pragmatism which would reduce truth to probability. They constitute a sufficient refutation of that Naturalism which takes the significance of ideas and ideals to be exhausted by description and causal explanation.

REALISM AND SUBJECTIVISM

C. I. Lewis. "Realism and Subjectivism." *Journal of Philosophy, Psychology and Scientific Methods* 10.2 (16 January 1913): 43–49.

Idealists have so generally united in insisting upon a few important theses that their real and radical differences have been somewhat neglected. Perhaps there is something in the idealistic temper itself which leads to emphasis upon agreements. Since all views have their bit of meaning in the life of history, the idealist has been fonder of including than of controvert them. Hence, whoever holds to the non-existence of any alogical real, to the priority of epistemology, and the precedence of "truths of appreciation" over "truths of description," has been regarded as fundamentally right-minded and trusted to approximate the logical corollaries – one's own – of these principles. But whatever other result the present active criticism may have, it seems bound to break in upon the idealistic love feast. Nothing is more distressing than to be looked upon as discredited when it is one's neighbor, or the remains of one's ancestors, to whom this honor is due. One dislikes hearing of "idealism," when it is a subjectivist epistemology which is under discussion, – provided, of course, one's own view has no "taint of subjectivism."

That the attack of the six realists has been upon a subjectivist theory of knowledge, we have their assurance. That all idealists are thereby called upon to feel aggrieved may or may not be the case. Almost every idealism holds as important certain considerations about the predicament of the knower. But they need not be those which Professor Perry has exhibited in his paper on "The Egocentric Predicament,"[1] or the similar ones which figure in the introduction to "The New Realism."[2]

The idealist is there represented as arguing that all reals must be known, or that knowing is constitutive of reality, because no real can ever be discovered out of relation to a knower. The writer, for one, admits the invalidity of any such argument. It would prove – if it proved anything – altogether too much. For "known" here means "completely and explicitly possessed as content of consciousness," the identity of the object with present

[1] This Journal, Vol. VIII., pages 5 ff. See also "Present Philosophical Tendencies," pages 128 ff.

[2] Pages 11–12.

experience. At least it is this meaning which the realist seems to have in mind. The identification of reality with that which is present to some one's experience, or with the sum total of present experiences, carries sinister implications. For the whole problem of knowledge, as idealism sees it, turns upon the fact that the knowing experience means or intends something beyond itself, something which just now it *is not*. Otherwise, the experience might have any affective or esthetic value which it happened to possess, but it would not be knowledge. It is characteristic of knowing, as a human activity, that its meaning is not satisfied by the self-evident presence of its own experience or content of consciousness. Hence the part played in idealistic theory by "immediacy and mediation," and the recognition of the "inevitably fragmentary character of human knowing." Thus the history of idealistic epistemology in the last century might be summed up as the history of the recipe for *getting out of* the egocentric predicament. The recognition that nothing can be known except present content of consciousness would be fatal to the idealist's program, for it would dismiss his problem without a hope of solution. The subjectivist's dogma – that to be is to be perceived, or otherwise given in consciousness – is as distressing to idealism as to realism.

To be sure, the idealist often makes use of the conception of an ideal or limiting case of knowledge – the toilless knowledge of an absolute mind – for which knowing would mean just that detailed and explicit identity of thought and object which subjectivism maintains for knowing in general. But the idealistic theory of knowledge can get on very comfortably without hypothecating the *existence* of such a case of knowing, provided only its validity as an ideal be allowed.[3] As an event among other events, no such case of knowing can occur anywhere at any time. The epistemological interest in the absolute is the interest in the validity of an ideal. Idealism must explicitly deny that the total reality is identical with the experience of any finite knower. Hence it is, in general, more accurate to represent idealism as maintaining the essentially know*able* character of reality than to take it as holding that all reals are known.

The knower's predicament is, then, this: all that ever is and ever can be explicitly possessed by a mind which attempts to know will be a present experience; while the sure possession of this experience can never satisfy the interests of knowledge. To glorify the immediate data of consciousness with the adjective "independent" will not help the situation in the least. The present content is there; it is experienced; its "cash value" is already ours. If one has bitten an apple, one is certain of the taste in one's mouth. It matters

[3] Some idealists would disagree with this statement. But the following sentence would, I think, satisfy all but the out-and-out subjectivists.

not whether it be an independent taste or no. What knowledge requires is that a "credit" attach to the taste. It must be significant of the quality of the apple or of another taste; it must intend something which it is not. What knowledge signifies is its meaning; and meaning always reaches beyond the present experience. The problem of the validity of this meaning is the problem of knowledge, as idealism – since Kant – conceives it.

The idealistic interest in the egocentric predicament is to point this problem, and to call attention to the fact that unless it is solved by proving some necessary relation of reality to our ways of knowing, we have only the alternatives of skepticism or various unproved and improvable dogmas which can neither refute one another nor establish a constructive case.

We may state the problem in realistic terms. "Realism does not deny that when *a* enters into a relation, such as knowledge, of which it is independent, *a* now acquires that relation, and is accordingly different *by so much*; but denies only that this added relation is necessary to *a* as already constituted. Thus when *a is known*, it is a itself, as constituted without knowledge, which is independent of that circumstance. The new complex *known-a* is of course dependent on knowledge as one of its parts."[4] To restate the egocentric predicament: All the *a*'s and *x*'s which anybody can ever hope to know will be *known-a*'s and *known-x*'s, and as such dependent on knowledge, while it is the *a*'s and *x*'s as constituted without knowledge that are independent. The *known-a*'s and *known-x*'s will differ from these independently real *a*'s and *x*'s "by so much" – that is, by as much as they are affected by entering into relation to a knower.

All this is trivial enough until we remember that it is exactly the fundamental tenet of all skepticism, and the *bête noire* of every dogmatism. The critical question is: By *how* much does *known-a* differ from *a*?

To avoid misunderstanding, one possible objection based on this difference may be ruled out as negligible. *Known-a* differs from *a* as a relative from an absolute term, or as *a* unqualified from *a* modified by "known." *Known-a* is a complex or one end of a relation, while *a* may be simple and unrelated. This difference is something like that between "truth" and "unpleasant truth," or that between *x*-which-is-greater-than-*y* and *z*-which-is-less-than-*z*. The logical realism of Plato was troubled to make clear how the greater could be also less. Similarly, it might trouble the new realism to make clear how independent *a* can be identical with an *a* which is known, when *known-a* is *not* independent. The difficulty is to explain identity in difference when relations are external; to explain how *known-a* is still the same *a* and yet different by being related. But any objection which turned upon this difficulty which strict logical realism has with identities, would be likely to seem rather thin. Such logical puzzles suggest a *solvitur ambulando*. It is considerations

[4] Perry, Ralph B., "The New Realism," page 118.

of a quite different nature which have proved historically important for idealism.

It seems useless to deny that knowing is, in some sense or other, a kind of acting. That knowing is acting would seem to argue some effect in that upon which the activity is directed. Hence *known-a* seems likely to differ from real *a* by as much as the knower's activity affects it when it enters the knowledge relation. This will hold true whether the knower is an organism which functions in definite ways of its own, a nervous arc, or merely an unbiologized mind.

Knowing might be a transforming activity of a nervous receptor, so that real *a*'s might be apprehended as upside-down *a*'s or real substances known as complexes of colors and pitches and other "qualities," while the independent substances were not even imaginable. The divergence of real *a* and *known-a* might be as great as that between immaterial essences and space-filling bodies. The possibilities for persuasive dogmatism here are wide.

Or knowing might be, not a transforming, but only a selecting activity. In that event, *known-a* might differ from real *a* as a continuously flowing whole from a cinematograph picture of it, or as a valuable collection from a junk heap, or an ordered array from a chaos. Knowing might be selecting so as to satisfy certain practical interests. Our Euclidean space might be just such a prejudiced selection from an *n*-dimensional or undimensional reality. And so on, for the other characters of our world as we know it. If knowing is such an activity, dominated by interests, all the reality we can ever hope to know will be relative to those interests. If knowing is acting according to certain principles, then the world of our possible knowledge will reflect the legislation of those principles.

To revert to the predicament in which the knower finds himself; he seems to be confined to the experience of such realities as are, by their nature, capable of entering the knowledge relation – if knowing is passive, – or which are transformed or selected according to certain principles – if knowing is a way of acting. If knowledge transforms or interestedly selects, or if some reals are by nature unfitted to the knowledge relation, then known reality will so far fail to indicate the character of reality as it exists independently of knowledge. That independent reality is neither transformed nor otherwise misrepresented by *known-a*'s, the knower can not, from the nature of his predicament, ever know; while the seemingly active character of knowing lends color to the supposition that "knowledge" misrepresents the independently real.

The assertion even that there is such an independent reality must remain a sheer assumption. The realist may point out the fallacy of arguing from the fact that all *known* reals are known. And the subjectivist may retort that if there be any unknown real, it is an identical proposition that nobody knows it. That reality is not transformed when brought into the knowledge relation

is a similar assumption. The proof of it would require the impossible comparison of *known-a* with *unknown-a*. That an independent reality has this or that character must remain an unwarranted assertion, when all the *a*'s which can be known will be *known-a*'s.

When the number and variety of activist theories of knowledge is remembered, it seems a hardy dogmatism which opposes to them all the necessarily unproved thesis that the real is independent of knowledge; and then adds that this independent reality is already so finely divided that no analysis can ever be carried so far as to violate its nature; but that all the relations and all the organization which mind can "legitimately" think are also already there; in particular, that these independent reals maintain all the logical relations; and, finally, that any of these reals or any complex of them may enter into the knowledge relation – a notable case of a relation not already there – without being transformed. Such a happy conjunction of miracles reminds one of Leibniz's preestablished harmony. But this latter-day best-of-all-possible-worlds appeals to no sufficient reason.

Whoever takes the principles of knowledge to be legislative for whatever can properly be called real, and holds reality to be so far dependent on knowledge, will be assured – if he makes out his case – that *known-a*'s and real *a*'s are not of essentially different character, and that knowledge is objectively valid. But the person who recognizes his egocentric predicament and at the same time insists that reality is independent of knowledge and its conditions, is confined within the circle of his experience, whose relation to reality beyond he can not know. Hence, from the idealistic point of view a subjectivist is not one who takes reality to be essentially relative to knowledge, but one who takes it to be independent. Subjectivism and dogmatism are twins.

If reality is independent, while the knower can not jump out of the circle of his own experience, then we have the alternatives of skepticism – for the critically minded – or any one of a presumably infinite number of dogmatisms. None of these will be able to *prove* that reality is independent of knowledge, because such a proof would require the discovery of not-known reals and their comparison with those known. And none of these dogmatisms will be able to prove that independent reality has the character attributed to it, because the only reals which are, beyond doubt, independent, can not be investigated. Thus whatever is constructive in such a theory, will necessarily remain indemonstrable. The utmost that can be proved is that some other theorist's argument, – *e.g.*, the subjectivist's argument from the egocentric predicament, – does not prove his case. The subjectivist's *view*, as a dogma, can not be proven false; it can only be proven not proved. And every dogmatism can perform this service for every other.

If the foregoing is correct, it is no accident that the realistic doctrine is largely negative. Rather, it is inevitably the case that every such view should contain two parts; the more important consisting of proofs that the proofs – not the

views – of other theories are unsound; the other portion made up of unproven assertions about an independent reality. It is a psychological defect that flesh is heir to, that we are sometimes led to believe a doctrine because arguments for an opposing theory are invalid. The realist surely means to take no advantage of us in this respect. If realists have disproved certain arguments for the dependence of reality upon knowledge, they have not thereby established the independence of reality. If the realist be right, and idealism essentially subjectivist, it must, to be sure, renounce its claim to a critical foundation. But it would still remain a consistent dogma, and as good as any other.

If it is taken to be the case that realism has undermined the idealist's *proofs* that the logical relations hold among reals because reality is relative to a legislative reason, still the idealistic contention is as probable as any. The realist can not disprove the assertion. He can never catch a reality out of relation to human reason, in order to discover if it still maintains its conformity to logical principles. That the logical relations are found among things does not make realism any more probable. For if to be real means to conform to certain categorical modes of thinking, then it will be an identical proposition which asserts that these principles state the relations of real things. The realist can only set up his own counter assertion and return to the business of demolishing the opponent's proofs. Thus we might conceivably be presented with dogmatic idealism and dogmatic realism as equally consistent and equally unproved doctrines; and the choice between them might, then, turn upon pragmatic considerations of workability or temperamental preferences.

If the realist can advance no direct proof that reality not only may be, but *is* independent of knowledge, that the independently real not only might not be, but *is not* altered when it enters the knowledge relation, that reality not only may be, but *is* so finely divided that analysis can never misrepresent it, – and so on for his other contentions, – then his arguments must necessarily be confined to the refutation of the proofs of other theories. In that event his case can prosper only if he turns philosophy into a Donnybrook Fair and hits every non-realistic head that shows. Even so, he will not prove his case, but only establish its possible truth, – the impossibility of proving the opposite. If this is the utmost that can be hoped from a philosophic theory, it is well that we should recognize it, and pay our respects to Hume.

A PRAGMATIC CONCEPTION OF THE *A PRIORI*

C. I. Lewis. "A Pragmatic Conception of the *A Priori*." *Journal of Philosophy* 20.7 (29 March 1923): 169–177.

The conception of the a *priori* points two problems which are perennial in philosophy; the part played in knowledge by the mind itself, and the possibility of "necessary truth" or of knowledge "independent of experience." But traditional conceptions of the *a priori* have proved untenable. That the mind approaches the flux of immediacy with some godlike foreknowledge of principles which are legislative for experience, that there is any natural light or any innate ideas, it is no longer possible to believe.

Nor shall we find the clue to the *a priori* in any compulsion of the mind to incontrovertible truth or any peculiar kind of demonstration which establishes first principles. All truth lies upon the rational mind the same compulsion to belief; as Mr. Bosanquet has pointed out, this character belongs to all propositions or judgments once their truth is established.

The difficulties of the conception are due, I believe, to two mistakes: whatever is *a priori* is necessary, but we have misconstrued the relation of necessary truth to mind. And the *a priori* is independent of experience, but in so taking it, we have misunderstood its relation to empirical fact. What is *a priori* is necessary truth not because it compels the mind's acceptance, but precisely because it does not. It is given experience, brute fact, the *a posteriori* element in knowledge which the mind must accept willy-nilly. The *a priori* represents an attitude in some sense freely taken, a stipulation of the mind itself, and a stipulation which might be made in some other way if it suited our bent or need. Such truth is necessary as opposed to contingent, not as opposed to voluntary. And the *a priori* is independent of experience not because it prescribes a form which the data of sense must fit, or anticipates some preëstablished harmony of experience with the mind, but precisely because it prescribes nothing to experience. That is *a priori* which is true, *no matter what*. What it anticipates is not the given, but our attitude toward it: it concerns the uncompelled initiative of mind or, as Josiah Royce would say, our categorical ways of acting.

The traditional example of the *a priori par excellence* is the laws of logic. These can not be derived from experience since they must first be taken for

granted in order to prove them. They make explicit our general modes of classification. And they impose upon experience no real limitation. Sometimes we are asked to tremble before the spectre of the "alogical," in order that we may thereafter rejoice that we are saved from this by the dependence of reality upon mind. But the "alogical" is pure bogey, a word without a meaning. What kind of experience could defy the principle that everything must either be or not be, that nothing can both be and not be, or that if x is y and y is z, then x is z? If anything imaginable or unimaginable could violate such laws, then the ever-present fact of change would do it every day. The laws of logic are purely formal; they forbid nothing but what concerns the use of terms and the corresponding modes of classification and analysis. The law of contradiction tells us that nothing can be both white and not-white, but it does not and can not tell us whether black is not-white, or soft or square is not-white. To discover *what contradicts what* we must always consult the character of experience. Similarly the law of the excluded middle formulates our decision that whatever is not designated by a certain term shall be designated by its negative. It declares our purpose to make, for every term, a complete dichotomy of experience, instead – as we might choose – of classifying on the basis of a tripartite division into opposites (as black and white) and the middle ground between the two. Our rejection of such tripartite division represents only our penchant for simplicity.

Further laws of logic are of similar significance. They are principles of procedure, the parliamentary rules of intelligent thought and speech. Such laws are independent of experience because they impose no limitations whatever upon it. They are legislative because they are addressed to ourselves – because definition, classification, and inference represent no operations of the objective world, but only our own categorical attitudes of mind.

And further, the ultimate criteria of the laws of logic are pragmatic. Those who suppose that there is, for example, *a* logic which everyone would agree to if he understood it and understood himself, are more optimistic than those versed in the history of logical discussion have a right to be. The fact is that there are several logics, markedly different, each self-consistent in its own terms and such that whoever, using it, avoids false premises, will never reach a false conclusion. Mr. Russell, for example, bases *his* logic on an implication relation such that if twenty sentences be cut from a newspaper and put in a hat, and then two of these be drawn at random, one of them will certainly imply the other, and it is an even bet that the implication will be mutual. Yet upon a foundation so remote from ordinary modes of inference the whole structure of *Principia Mathematica* is built. This logic – and there are others even more strange – is utterly consistent and the results of it entirely valid. Over and above all questions of consistency, there are issues of logic which can not be determined – nay, can not even be argued – except on pragmatic grounds of conformity to human bent and intellectual convenience. That we

have been blind to this fact, itself reflects traditional errors in the conception of the *a priori*.

We may note in passing one less important illustration of the *a priori* – the proposition "true by definition." Definitions and their immediate consequences, analytic propositions generally, are necessarily true, true under all possible circumstances. Definition is legislative because it is in some sense arbitrary. Not only is the meaning assigned to words more or less a matter of choice – that consideration is relatively trivial – but the manner in which the precise classifications which definition embodies shall be effected, is something not dictated by experience. If experience were other than it is, the definition and its corresponding classification might be inconvenient, fantastic, or useless, but it could not be false. Mind makes classifications and determines meanings; in so doing it creates the *a priori* truth of analytic judgments. But that the manner of this creation responds to pragmatic considerations, is so obvious that it hardly needs pointing out.

If the illustrations so far given seem trivial or verbal, that impression may be corrected by turning to the place which the *a priori* has in mathematics and in natural science. Arithmetic, for example, depends *en toto* upon the operation of counting or correlating, a procedure which can be carried out at will in any world containing identifiable things – even identifiable ideas – regardless of the further characters of experience. Mill challenged this *a priori* character of arithmetic. He asked us to suppose a demon sufficiently powerful and maleficent so that every time two things were brought together with two other things, this demon should always introduce a fifth. The implication which he supposed to follow is that under such circumstances 2 + 2 = 5 would be a universal law of arithmetic. But Mill was quite mistaken. In such a world we should be obliged to become a little clearer than is usual about the distinction between arithmetic and physics, that is all. If two black marbles were put in the same urn with two white ones, the demon could take his choice of colors, but it would be evident that there were more black marbles or more white ones than were put in. The same would be true of all objects in any wise identifiable. We should simply find ourselves in the presence of an extraordinary physical law, which we should recognize as universal in our world, that whenever two things were brought into proximity with two others, an additional and similar thing was always created by the process. Mill's world would be physically most extraordinary. The world's work would be enormously facilitated if hats or locomotives or tons of coal could be thus multiplied by anyone possessed originally of two pairs. But the laws of mathematics would remain unaltered. It is because this is true that arithmetic is *a priori*. Its laws prevent *nothing*; they are compatible with anything which happens or could conceivably happen in nature. They would be true in any possible world. Mathematical addition is not a physical transformation. Physical changes which result in an increase or decrease of the

countable things involved are matters of everyday occurrence. Such physical processes present us with phenomena in which the purely mathematical has to be separated out by abstraction. Those laws and those laws only have necessary truth which we are prepared to maintain, no matter what. It is because we shall always separate out that part of the phenomenon not in conformity with arithmetic and designates it by some other category – physical change, chemical reaction, optical illusion – that arithmetic is *a priori*.

The *a priori* element in science and in natural law is greater than might be supposed. In the first place, all science is based upon definitive concepts. The formulation of these concepts is, indeed, a matter determined by the commerce between our intellectual or our pragmatic interests and the nature of experience. Definition is classification. The scientific search is for such classification as will make it possible to correlate appearance and behavior, to discover law, to penetrate to the "essential nature" of things in order that behavior may become predictable. In other words, if definition is unsuccessful, as early scientific definitions mostly have been, it is because the classification thus set up corresponds with no natural cleavage and does not correlate with any important uniformity of behavior. A name itself must represent *some* uniformity in experience or it names nothing. What does not repeat itself or recur in intelligible fashion is not a thing. Where the definitive uniformity is a clue to other uniformities, we have successful scientific definition. Other definitions can not be said to be false; they are merely useless. In scientific classification the search is, thus, for *things worth naming*. But the naming, classifying, defining activity is essentially prior to investigation. We can not interrogate experience in general. Until our meaning is definite and our classification correspondingly exact, experience can not conceivably answer our questions.

In the second place, the fundamental laws of any science – or those treated as fundamental – are *a priori* because they formulate just such definitive concepts or categorical tests by which alone investigation becomes possible. If the lightning strikes the railroad track at two places, *A* and *B*, how shall we tell whether these events are simultaneous? "We ... require a definition of simultaneity such that this definition supplies us with the method by means of which ... we can decide whether or not both the lightning strokes occurred simultaneously. As long as this requirement is not satisfied, I allow myself to be deceived as a physicist (and of course the same applies if I am not a physicist), when I imagine that I am able to attach a meaning to the statement of simultaneity....

"After thinking the matter over for some time you then offer the following suggestion with which to test simultaneity. By measuring along the rails, the connecting line *AB* should be measured up and an observer placed at the midpoint *M* of the distance *AB*. This observer should be supplied with an

arrangement (*e.g.*, two mirrors inclined at 90°) which allows him visually to observe both places *A* and *B* at the same time. If the observer perceives the two flashes at the same time, then they are simultaneous.

"I am very pleased with this suggestion, but for all that I can not regard the matter as quite settled, because I feel constrained to raise the following objection: 'Your definition would certainly be right, if I only knew that the light by means of which the observer at *M* perceives the lightning flashes travels along the length *A–M* with the same velocity as along the length *B–M*. But an examination of this supposition would only be possible if we already had at our disposal the means of measuring time. It would thus appear as though we were moving here in a logical circle.'

"After further consideration you cast a somewhat disdainful glance at me – and rightly so – and you declare: 'I maintain my previous definition nevertheless, because in reality it assumes absolutely nothing about light. There is only *one* demand to be made of the definition of simultaneity, namely, that in every real case it must supply us with an empirical decision as to whether or not the conception which has to be defined is fulfilled. That light requires the same time to traverse the path *A–M* as for the path *B–M* is in reality *neither a supposition nor a hypothesis* about the physical nature of light, but a *stipulation* which I can make of my own freewill in order to arrive at a definition of simultaneity.' ... We are thus led also to a definition of 'time' in physics."[1]

As this example from the theory of relatively well illustrates, we can not even ask the questions which discovered law would answer until we have first by *a priori* stipulation formulated definitive criteria. Such concepts are not verbal definitions, or classifications merely; they are themselves laws which prescribe a certain uniformity of behavior to whatever is thus named. Such definitive laws are *a priori*; only so can we enter upon the investigation by which further laws are sought. Yet it should also be pointed out that such *a priori* laws are subject to abandonment if the structure which is built upon them does not succeed in simplifying our interpretation of phenomena. If, in the illustration given, the relation "simultaneous with," as defined, should not prove transitive – if event *A* should prove simultaneous with *B*, and *B* with *C*, but not *A* with C – this definition would certainly be rejected.

And thirdly, there is that *a priori* element in science – as in other human affairs – which constitute the criteria of the real as opposed to the unreal in experience. An object itself is uniformity. Failure to behave in certain categorical ways marks it as unreal. Uniformities of the type called "natural law" are the clues to reality and unreality. A mouse which disappears where no hole is, is no real mouse; a landscape which recedes as we approach is but illusion. As the queen remarked in the episode of the wishing-carpet; "If this

[1] Einstein, *Relativity*, pp. 26–28: italics are the author's.

were real, then it would be a miracle. But miracles do not happen. Therefore I shall wake presently." That the uniformities of natural law are the only reliable criteria of the real is inescapable. But such a criterion is *ipso facto a priori*. No conceivable experience could dictate the alteration of a law so long as failure to obey that law marked the content of experience as unreal.

This is one of the puzzles of empiricism. We deal with experience: what any reality may be which underlies experience, we have to learn. What we desire to discover is natural law, the formulation of those uniformities which obtain amongst the real. But experience as it comes to us contains not only the real but all the content of illusion, dream, hallucination, and mistake. The *given* contains both real and unreal, confusingly intermingled. If we ask for uniformities of this unsorted experience, we shall not find them. Laws which characterize all experience, of real and unreal both, are non-existent and would in any case be worthless. What we seek are the uniformities of the *real*; but *until we have such laws, we can not sift experience and segregate the real.*

The obvious solution is that the enrichment of experience, the separation of the real from the illusory or meaningless, and the formulation of natural law, all grow up together. If the criteria of the real are *a priori*, that is not to say that no conceivable character of experience would lead to alteration of them. For example, spirits can not be photographed. But if photographs of spiritistic phenomena, taken under properly guarded conditions, should become sufficiently frequent, this *a priori* dictum would be called in question. What we should do would be to redefine our terms. Whether "spook" was spirit or matter, whether the definition of "spirit" or of "matter" should be changed; all this would constitute one interrelated problem. We should reopen together the question of definition or classification, of criteria for this sort of real, and of natural law. And the solution of one of these would mean the solution of all. Nothing could *force* a redefinition of spirit or of matter. A sufficiently fundamental relation to human bent, to human interests, would guarantee continuance unaltered even in the face of unintelligible and baffling experiences. In such problems, the mind finds itself uncompelled save by its own purposes and needs. I *may* categorize experience as I will; but *what* categorical distinctions will best serve my interests and objectify my own intelligence? What the mixed and troubled experience shall be – that is beyond me. But what I shall do with it – that is my own question, when the character of experience is sufficiently before me. I am coerced only by my own need to understand.

It would indeed be inappropriate to characterize as *a priori* a law which we are wholly prepared to alter in the light of further experience, even though in an isolated case we should discard as illusory any experience which failed to conform. But the crux of the situation lies in this; beyond such principles as those of logic, which we seem fully prepared to maintain no matter what, there must be further and more particular criteria of the real prior to any inves-

tigation of nature whatever. We can not even interrogate experience without a network of categories and definitive concepts. And we must further be prepared to say what experimental findings will answer what questions, and how. Without tests which represent anterior principle, there is no question which experience could answer at all. Thus the most fundamental laws in any category – or those which we regard as most fundamental – are *a priori*, even though continued failure to render experience intelligible in such terms might result eventually in the abandonment of that category altogether. Matters so comparatively small as the behavior of Mercury and of starlight passing the sun's limb may, if there be persistent failure to bring them within the field of previously accepted modes of explanation, result in the abandonment of the independent categories of space and time. But without the definitions, fundamental principles, and tests, of the type which constitute such categories, no experience whatever could prove or disprove anything. And to that mind which should find independent space and time absolutely necessary conceptions, no possible experiment could prove the principles of relativity. "There must be some error in the experimental findings, or some law not yet discovered," represents an attitude which can never be rendered impossible. And the only sense in which it could be proved unreasonable would be the pragmatic one of comparison with another method of categorical analysis which more successfully reduced all such experience to order and law.

At the bottom of all science and all knowledge are categories and definitive concepts which represent fundamental habits of thought and deep-lying attitudes which the human mind has taken in the light of its total experience. But a new and wider experience may bring about some alteration of these attitudes, even though by themselves they dictate nothing as to the content of experience, and no experience can conceivably prove them invalid.

Perhaps some will object to this conception on the ground that only such principles should be designated *a priori* as the human mind *must* maintain, no matter what; that if, for example, it is shown possible to arrive at a consistent doctrine of physics in terms of relativity, even by the most arduous reconstruction of our fundamental notions, then the present conceptions are by that fact shown not to be *a priori*. Such objection is especially likely from those who would conceive the *a priori* in terms of an absolute mind or an absolutely universal human nature. We should readily agree that a decision by popular approval or a congress of scientists or anything short of such a test as would bring to bear the full weight of human capacity and interest, would be ill-considered as having to do with the *a priori*. But we wish to emphasize two facts: first, that in the field of those conceptions and principles which have altered in human history, there are those which could neither be proved nor disproved by any experience, but represent the uncompelled initiative of human thought – that without this uncompelled initiative no growth of science, nor any science at all, would be conceivable. And second, that the difference between

such conceptions as are, for example, concerned in the decision of relativity versus absolute space and time, and those more permanent attitudes such as are vested in the laws of logic, there is only a difference of degree. The dividing line between the *a priori* and the *a posteriori* is that between principles and definitive concepts which *can* be maintained in the face of all experience and those genuinely empirical generalizations which *might* be proven flatly false. The thought which both rationalism and empiricism have missed is that there are principles, representing the initiative of mind, which impose upon experience no limitations whatever, but that such conceptions are still subject to alteration on pragmatic grounds when the expanding boundaries of experience reveal their infelicity as intellectual instruments.

Neither human experience nor the human mind has a character which is universal, fixed, and absolute. "The human mind" does not exist at all save in the sense that all humans are very much alike in fundamental respects, and that the language habit and the enormously important exchange of ideas has greatly increased our likeness in those respects which are here in question. Our categories and definitions are peculiarly social products, reached in the light of experiences which have much in common, and beaten out, like other pathways, by the coincidence of human purposes and the exigencies of human coöperation. Concerning the *a priori* there need be neither universal agreement nor complete historical continuity. Conceptions, such as those of logic, which are least likely to be affected by the opening of new ranges of experience, represent the most stable of our categories; but none of them is beyond the possibility of alteration.

Mind contributes to experience the element of order, of classification, categories, and definition. Without such, experience would be unintelligible. Our knowledge of the validity of these is simply consciousness of our own fundamental ways of acting and our own intellectual intent. Without this element, knowledge is impossible, and it is here that whatever truths are necessary and independent of experience must be found. But the commerce between our categorical ways of acting, our pragmatic interests, and the particular character of experience, is closer than we have realized. No explanation of any one of these can be complete without consideration of the other two.

Pragmatism has sometimes been charged with oscillating between two contrary notions; the one, that experience is "through and through malleable to our purpose," the other, that facts are "hard" and uncreated by the mind. We here offer a mediating conception: through all our knowledge runs the element of the *a priori*, which is indeed malleable to our purpose and responsive to our need. But throughout, there is also that other element of experience which is "hard," "independent," and unalterable to our will.

THE NATURE OF THE A PRIORI, AND THE PRAGMATIC ELEMENT IN KNOWLEDGE

C. I. Lewis. "The Nature of the A Priori, and the Pragmatic Element in Knowledge." *Mind and the World-Order: Outline of a Theory of Knowledge* (New York: Charles Scribner's Sons, 1929), chap. 8, pp. 230–273.

In experience, mind is confronted with the chaos of the given. In the interest of adaptation and control, it seeks to discover within or impose upon this chaos some kind of stable order, through which distinguishable items may become the signs of future possibilities. Those patterns of distinction and relationship which we thus seek to establish are our concepts. These must be determined in advance of the particular experience to which they apply in order that what is given may have meaning. Until the criteria of our interpretation have been fixed, no experience could be the sign of anything or even answer any question. Concepts thus represent what mind brings to experience. That truth which is a priori rises from the concept itself. This happens in two ways. In the first place, there is that kind of truth, exemplified most clearly by pure mathematics, which represents the elaboration of concepts in the abstract, without reference to any particular application to experience. Second, the concept in its application to the given exhibits the predetermined principles of interpretation, the criteria of our distinguishing and relating, of classification, and hence the criteria of reality of any sort. This is most clearly evident in the case of those basic concepts, determining major classes of the real, which may be called the categories, though in less important ways it holds true of concepts in general.

For both these ways in which the truth is fixed, independently of experience or in advance of it, it represents the explication or elaboration of the concept itself. *The a priori is not a material truth, delimiting or delineating the content of experience as such, but is definitive or analytic in its nature.*

The a priori as thus definitive or explicative, representing principles of order and criteria of the real, meets all the requirements which emerge from the discussion of the preceding chapter. Since it is a truth about our own interpretative attitude, it imposes no limitation upon the future possibilities of experience; that is a priori which we can maintain in the face of all experience, come what will. And although it represents the contribution of the mind itself

to knowledge, it does not require that this mind be universal, absolute, or a reality of a higher order than the object of its knowledge. The a priori does not need to be conceived as the inscrutable legislation of a transcendent mind, the objects of which, being limited by its forms of intuition, are phenomenal only. Hence the distinction of the legislative mind as ultimate reality from its object which is not thus ultimate, falls away, and with it the difficulty of knowing the mind and of recognizing what is a priori as that which is determined by our own active attitude. The a priori is knowable simply through the reflective and critical formulation of our own principles of classification and interpretation. Such legislation can be recognized as our own act because the a priori principle which is definitive, and not a material truth of the content of experience, *has alternatives*. It can be recognized as due to the mind itself by the ordinary criteria of responsibility in general – that a different mode of acting is possible and makes a discoverable difference. Where there is no possibility of refraining from our act or acting otherwise, there can be no discoverable activity – indeed, there is no act. As has been pointed out, if what is a priori sprang from a transcendent mind, acting in unalterable ways, it never could be known to be our own creation or distinguished from those facts of life which are due to the nature of the independent real. What can be known to be a priori must meet the apparently contradictory requirements that it may be known in advance to hold good for all experience and that it have alternatives. The principle of classification or interpretation meets these requirements, because the alternative to a definition or a rule is not its falsity but merely its abandonment in favor of some other. Thus the determination of the a priori is in some sense like free choice and deliberate action.

This meets also another difficulty which will already have presented itself to the reader. If the a priori is something made by mind, mind may also alter it. There will be no assurance that what is a priori will remain fixed and absolute throughout the history of the race or for the developing individual. From the point of view here presented, this is no difficulty at all but the explanation of an interesting historical fact. The rationalist prejudice of an absolute human reason, universal to all men and to all time, has created an artificially exalted and impossible conception of the categories as fixed and unalterable modes of mind. One result has been to limit the usefulness of the conception, so that what we could call, in ordinary parlance, "the categories of physics" or "the categories of biology" would not serve as examples of "the categories" because it is obvious that the fundamental principles and concepts of any natural science change progressively with its development. This, in turn, has served to obscure the large and important part played in science by that element of categorial order which cannot be determined by merely empirical fact but must be provided by the scientist himself in his setting of the problem and fixing the criteria by which the meaning of experimental findings is to be

interpreted. Thus the most impressive examples of human knowledge have been too little drawn upon in discussions of epistemology.

The assumption that our categories are fixed for all time by an original human endowment, is a superstition comparable to the belief of primitive peoples that the general features of their life and culture are immemorial and of supernatural origin. The grand divisions of our thought-world differ from those of our early ancestors as our modern machines differ from their primitive artifacts and our geographical and astronomical outlook from their world bounded by a distant mountain range or the pillars of Hercules and shut up under the bowl of the sky. Certain fundamental categories are doubtless very ancient and permanent: thing and property, cause and effect, mind and body, and the relations of valid inference, doubtless have their counterparts wherever and whenever the human mind has existed. But even here, the supposition of complete identity and continuity is at variance with facts which should be obvious.

For all primitive peoples, for example, and for some who distinctly are not primitive, the properties of a thing are not localized in time and space, as for us. Almost anything may be a talisman or fetish, whose action takes place (without intermediaries) at a distance and in a time posterior to its destruction by fire or by being eaten. Things also have doubles, inscrutably operating in that other-world whose influence mysteriously interpenetrates the realm which we call "nature." Furthermore, the long-persistent problem in physics of action at a distance increasingly comes back to haunt us and to unite with new problems of physical interpretation which threaten to drive us once more to dissipate the "material thing" throughout all time and space; to find its manifestation and even its very being in a spatio-temporal spread of events indefinitely extended.

That the present distinction of mind and body corresponds only roughly with that division in ancient thought; that body of inert matter and mind which does not occupy space are no older than the advent of that esoteric doctrine which dawned in Europe with the Greek mysteries and Christianity – this can hardly escape us. This mode of distinction contrasts with the tripartite division into body, mind, and spirit, and with the five-fold and *n*-fold divisions of more easterly cultures. It is also obvious that the pressure of modern science in the field of biology and our present uneasiness about this twofold nature of the individual, augur some departure from the clarity of Cartesian dualism.

The *names* of our categories may be very old and stable, but the *concepts*, the modes of classifying and interpreting which they represent undergo progressive alteration with the advance of thought.

Probably those modes of thought embodied in logic and in the forms of language are more fundamental than others. And very likely what we recognize as explicit categories are always superficial as compared with more

deep-lying forms which only the persistent and imaginative student can catch, in some vague and fleeting insight, because they are so nearly the marrow of our being and so all-pervasive that they can hardly be phrased in significant expression. These go back to the point where mind is continuous with the objective and indistinguishable from it. For we can know our own nature only in so far as we comprehend or vaguely imagine what it would mean to be other than we are. We can recognize the presence of mind only where mind makes a discoverable difference. If we should think of mind as what the rationalists suppose – superimposing on reality a rigid mask of form outside which mind itself could never catch a glimpse – then this altogether universal and un-get-overable form could never become self-conscious. It would remain – in Fichte's phrase – the "Great Thought which no man has ever thought." It would be not of mind but of the objective reality; it would be the Absolute which forever conditions but never can be known. But the idealistic rationalist can not eat his cake and have it too; the mind which can be recognized as such is *ipso facto* finite and limited by discoverable bounds. That mind is thus continuous with the finally mysterious – the is-ness of what is – we must of course grant; in the contemplation of mind we contemplate one aspect of the Great Fact in the presence of which all explicit thought is silenced. But the categories are not the form of that which, having no alternative and no bounds, is formless. They are the explicit bounds of that which, if it transcend them, must – fall into some other category. They are divisions within the comprehensible in general, but not the shape of comprehensibility itself.

It will be well to make clear that the conception here presented does not imply that because the a priori is something made by mind and capable of alteration, it is therefore arbitrary in the sense of being capriciously determined. That it is not, and cannot be, determined by the given, does not imply that it answers to no criteria whatever. That type of a priori truth which pure mathematics illustrates – that is, the elaboration of concepts in abstraction from all questions of particular applications – answers only to the criteria of self-consistency. Just to the extent that the development of such a purely analytic system is withdrawn from every consideration of useful application, its truth is simply truth to the original meanings embodied in its basic concepts. But when concepts are intended to be applied in experience, and a priori principles are to determine modes of classification and interpretation, the case is different. Here mind is still uncompelled by any possible content of experience. But knowledge has a practical business to perform, the interests of action which it seeks to serve. The mode of the mind's activity answers to our need to understand, in the face of an experience always more or less baffling, and of our need to control. There is also another factor which helps to determine what modes of attempted comprehension will be most easily and most widely useful. While that absolute human reason which the rationalist supposes to be completely and universally possessed by every human is a

myth, nevertheless man, being a species of animal, has characteristics which mark him as such, and some of these at least are reflected in the bent of human thought. Some modes of thought are simpler and come more naturally to us than others which still are possible and which might, indeed, be called upon if an enlarged experience should sufficiently alter our problems – just as some modes of bodily translation are more easy and natural, though these may be somewhat altered when the environment includes a sufficient number of automobiles and airplanes. Moreover, the fundamental likeness in our modes of thought, which represents whatever community of nature marks our original mental endowment, is continually enhanced by the fact that the needs of individual humans are mostly served by coöperation with others. "The human mind" is distinctly a social product, and our categories will reflect that fact.

In brief, while the a priori is dictated neither by what is presented in experience nor by any transcendent and eternal factor of human nature, it still answers to criteria of the general type which may be termed pragmatic. The human animal with his needs and interests confronts an experience in which these must be satisfied, if at all. Both the general character of the experience and the nature of the animal will be reflected in the mode of behavior which marks this attempt to realize his ends. This will be true of the categories of his thinking as in other things. And here, as elsewhere, the result will be reached by a process in which attitudes tentatively assumed, disappointment in the ends to be realized, and consequent alteration of behavior will play their part.

Confirmation of this conception of the a priori could only come from comprehensive and detailed examination of at least the major categories of thought and the underlying principles of common-sense and scientific explanation. Such a task cannot be undertaken here; at most only a few illustrations can be offered with the hope that they are typical.

The paradigm of the a priori in general is the definition. It has always been clear that the simplest and most obvious case of truth which can be known in advance of experience is the explicative proposition and those consequences of definition which can be derived by purely logical analysis. These are necessarily true, true under all possible circumstances, because definition is legislative. Not only is the meaning assigned to words more or less a matter of choice – that consideration is relatively trivial – but the manner in which the precise classifications which definition embodies shall be affected, is something not dictated by experience. If experience were other than it is, the definition and its corresponding classification might be inconvenient, useless, or fantastic, but it could not be false. Mind makes classifications and determines meanings; in so doing, it creates that truth without which there could be no other truth.

Traditionally propositions which have been recognized as analytic have often not been classed with the a priori; they have been regarded as too

unimportant; sometimes they have even been repudiated as not truth at all but merely verbal statements. The main reasons for this cavalier attitude have been two; in the first place, it has been overlooked that the real itself is a matter of definition and that the dichotomy of real and unreal is that first and basic classification which the mind confronted with experience must make. And second, the powerful sweep and consequence of purely logical analysis has not been understood.

The clearest example of this power of analysis is to be found, of course, in mathematics. The historical importance of mathematics as a paradigm of a priori truth needs no emphasis. Almost one may say that traditional conceptions of the a priori are the historical shadow of Euclidean geometry. But in mathematics much water has gone under the bridge since the time of Kant, and in the light of the changes which have come about, these traditional conceptions are proved totally impossible. The course of this development will be familiar to the reader; only the outstanding features of it need be mentioned.

Though there are anticipations of current mathematical conceptions as far back as Plato, the movement which led to their present acceptance dates principally from the discovery of the non-Euclidean geometries. In developing these systems, it was obviously impossible to depend on intuitions of space, either pure or empirical. If Euclid is true of our space, then no one of these geometries can be; and if Euclid is not true and certain, then the main ground of the supposition that we can rely on intuitions of the spatial is discredited.[1] Hence in developing the non-Euclidean systems, all constructions such as helping-lines, and any step in proof which should depend not upon pure logic but upon the character of space must be dispensed with. If a step in proof cannot be taken by rigorous logic alone, it cannot be taken at all. When it was found thus possible to develop the non-Euclidean systems without appeal to any extra-logical aids, a similar revision of Euclid was carried out, eliminating all explicit or implicit reliance upon constructions, superpositions or other appeal to spatial intuition. This new method, together with certain indicated generalizations, constituted the so-called "modern geometry."

Next it was demonstrated that not only geometry but other branches as well can be developed by the deductive method, from a relatively few assumptions, and likewise without reliance upon empirical data. As a result all pure mathematics is found to be abstract, in the sense of being independent of any particular application. Because if all the theorems follow logically from the definitions and postulates, then we can alter at will what we let the terms, such

[1] Euclid and a non-Euclidean system cannot both be true of space while corresponding denotations of terms are maintained. The discovery that they may both become true of space with systematic difference in the denotation of terms played its part in the logic of modern geometry.

as "point" and "line," denote without in the least disturbing any step in the proofs. *Whatever* "point" and "line" may mean, given these assumptions about them, these consequences – the rest of the system – must also hold of them, since the theorems follow from the assumptions by rigorous and purely logical deduction.

The question of the truth of the mathematical system *in application* was thus completely separated from its mathematical or logical integrity. Still further changes went along with this. The "truth" of initial assumptions lost all meaning in any other sense than their exhibition of certain patterns of logical relationship to be adhered to throughout. The distinguishing assumptions of a non-Euclidean geometry, for example, so far from being self-evident, were supposedly mere arbitrary falsehoods with respect to their most obvious empirical denotation. The term "axiom" was replaced by "postulate" or "primitive proposition." In the interest of logical simplicity alternative sets of assumptions which would give the same system of propositions were investigated. What should be initially assumed and what proved became a question merely of such logical simplicity. It became customary to speak of the truth of mathematics as hypothetical or to say that what mathematics asserts is only the relation of implication between postulates and theorems. It is truth about certain patterns of logical relationship established by initial definition or postulate.

Further, it became clear that the distinction between those assumptions of the form called "definitions" and those termed "postulates" was relatively arbitrary and unimportant. Logically it makes little difference except for simplicity of procedure, how far the order of a system is set up by propositions in which "is" means logical equivalence and how far by those in which it means only the one-way implication of concepts or subsumption of classes. Since the content of the concepts of pure mathematics is simply that order to which they give rise, that manner of development in which essential relationships are exhibited as the definitive meaning of the concepts is truest to the nature of the subject.

The completion of this last refinement of mathematical method was made by Whitehead and Russell in "Principia Mathematica."[2] It was here

[2] This development is still too recent for the exact bearing of its consequences to be clear in all respects. Points concerning which there may be some doubt are as follows:

(1) Can this method, without alteration, be completely carried out in geometrical branches? Some concepts needed in geometry are dealt with in volume III, but volume IV, which was to complete this subject, has not appeared.

(2) There are certain assumptions, such as the "axiom of infinity" which appear as *hypotheses* to some theorems which, apparently, require them. It is not known whether this procedure is entirely avoidable without abandoning certain classes of theorems which have their place in usual mathematical developments.

proved that the initial assumptions of mathematics can all be dispensed with, except the definitions. The truths of mathematics follow merely from definitions which exhibit the meaning of its concepts, by purely logical deduction. Judgment of such mathematical truth is, thus, completely and exclusively analytic; no synthetic judgment, a priori or otherwise, is requisite to knowledge of pure mathematics. The content of the subject consists entirely of the rigorous logical analysis of abstract concepts, in entire independence of all data of sense or modes of intuition. The definitions which embody these concepts are not required to be true in any other sense than that they should be precise and clear; the formulation of them represents an act of mind which is legislative or creative and in some sense arbitrary; it answers to no criteria save self-consistency and adequacy to whatever purposes the elaboration of the system itself may be supposed to satisfy. It may still be true that "concepts without precepts are empty," but it must be granted that there is a kind of knowledge of "empty" concepts. Or at least such admission can be avoided only by a restriction of the term "knowledge" to exclude pure mathematics and logic. The importance of such a priori analytic knowledge is witnessed by the basic character of these subjects for all other sciences.

Pure mathematics stands between logic on the one side and the empirical application of mathematics on the other. Logic is in some respects the illustration *par excellence* of the a priori, since its laws are the most completely general of any. The laws of logic cannot be proved unless they should first be taken for granted as the principles of their own demonstration. They make explicit the basic principles of all interpretation and of our general modes of classification. And they impose no limitation upon the content of experience. Sometimes we are asked to tremble before the specter of the "alogical" in order that we may thereafter rejoice that we are saved from

(3) Consistency and independence are of the essence of mathematics, since they concern its logical integrity, apart from all questions of application. It is possible to think, in view of usual mathematical procedures, that tests of consistency and independence involve implicit appeal to intuition or to applications. By the method of "Principia" it is not clear how it is possible to deal with such problems. Independence proofs have been applied to logistic systems by N. Bernays and others, but only by a reversion to those familiar devices the logic of which is precisely the point in question. Professor H. M. Sheffer has offered a general method for testing consistency and independence without reference to any possible application (See his "General Theory of Notational Relativity," privately circulated). The method of dealing with usual branches in this way must wait upon his further publication.

(4) It is questionable whether logistic methods employed in "Principia" are in all respects acceptable as "proof" and whether they do not, in certain ways, import illicit assumptions of "existence." But if there are defects of this sort, it is highly probable that they are avoidable.

this by the dependence of reality upon mind. But the "alogical" is pure bogey, a word without a meaning. What kind of experience could defy the principle that everything must either be or not be, that nothing can both be and not be, or that if *X* is *Y* and *Y* is *Z*, then *X* is *Z*? If anything imaginable or unimaginable could violate such laws, then the ever-present fact of change would do it every day. The laws of logic are purely formal; they forbid nothing but what concerns the use of terms and the corresponding modes of classification and analysis. The law of contradiction tells us that nothing can be both white and not white, but it does not and can not tell us whether black is not white or soft or square is not white. To discover what contradicts what we must turn to more particular considerations. Similarly the law of the excluded middle formulates our decision that whatever is not designated by a certain term shall be designated by its negative. It declares our purpose to make, for every name, a complete dichotomy of experience, instead – as we might choose – of classifying on the basis of a tripartite division into opposites and a middle ground between the two. Our rejection of such tripartite division represents only our penchant for simplicity and similar considerations.

Further laws of logic are of like significance. They are principles of procedure, the parliamentary rules of intelligent thought and action. Such laws are independent of the given because they impose no limitations whatever upon it. They are legislative because they are addressed to ourselves – because definition, classification, and inference represent no operation in the world of things, but only our categorial attitudes of mind.

Furthermore, the ultimate criteria of the laws of logic are pragmatic. Indeed, how could they be anything else? The truth of logic is not material truth but a truth about the modes of self-consistency. Since this is so, logic must be the test of its *own* consistency, and hence of its own truth, as well as the test of the consistency of everything else. But if logic tests its own truth, then what can be the test of truth in a genuine issue of logic, which is not a question of mere inadvertance on one side or the other? Those who suppose that there is *a* logic which everyone would agree to if he understood it and understood himself, are more optimistic than those versed in the history of logical discussion have a right to be. The fact is that, as was pointed out in the preceding chapter, there are several logics, markedly different, each self-consistent *in its own terms* and such that whoever, using it, avoids false premises, will never reach a false conclusion. Mr. Russell, for example, bases *his* logic on an implication relation such that if twenty sentences be cut from a newspaper and put in a hat, and then two of these be drawn at random, one of them will certainly imply the other, and it is an even chance that the implication will be mutual. Yet upon a foundation so remote from ordinary modes of inference the whole structure of "Principia Mathematica" is built. This logic is utterly self-consistent and

valid in its own terms. There are others even more strange of which the same may be said.[3] Genuine issues of logic are those which stand above such questions of the merely self-critical integrity of the logical system. There are such issues, and these cannot be determined – nay, cannot even be argued – except on pragmatic grounds of human bent and intellectual convenience. That we have been blind to this fact, and that much good paper and ink has been wasted by logicians who have tried to argue on some other grounds what are only questions of convenience or of value, itself reflects traditional errors in the conception of the a priori.

Pure mathematics and logic exemplify that type of the a priori which have the highest degree of abstraction from experience – whose concepts are so general that we may call them "empty." Concerning these, there may be a question whether there will not be issues of an entirely different sort when we attempt to apply them in experience. One may say, for example, that when geometry becomes abstract and freed from all necessary reference to our intuitions of the spatial, the question of the *truth about space* becomes an entirely separate one, and one with respect to which there must be reference to forms of intuition or something of the sort, or there will be nothing which is determinable a priori at all. Similarly one may say that if arithmetic as a purely abstract deductive system has no necessary reference to the character of countable objects, then its a priori truth is of no value for the anticipation of the behavior of concrete things. This will be true, of course, and of importance. If there should be a priori truth *only* with respect to concepts in utter abstraction from experience, and if this a priori character were to vanish when these concepts are given a concrete denotation, then the significance of the a priori for the natural sciences and for common practice would be largely, if not completely, lost.

But there *is* an a priori truth of concepts which have concrete denotation. Let us consider the example of arithmetic. Arithmetic depends *in toto* upon the operation of counting or correlating, a procedure which can be carried out in any world containing identifiable things, regardless of the further characters of experience. Mill challenged this a priori character of arithmetic. He asked us to suppose a demon sufficiently powerful and maleficent so that every time two things were brought together with two other things, this demon should always introduce a fifth. The conclusion which he supposed to follow is that under such circumstances $2 + 2 = 5$ would be a universal law of arithmetic. But Mill was quite mistaken. In such a world we should be obliged to become a little clearer than is usual about the distinction between arithmetic and physics, that is all. If two black marbles were put in the same box with two white ones, the demon could take his choice of colors, but it would be evident

[3] See p. 209, footnote.

that there were more black marbles or more white ones than were put in. The same would be true of all objects in any wise identifiable. We should simply find ourselves in the presence of an extraordinary physical law, which we should recognize as universal in our world, that whenever two things were brought into proximity with two others, an additional and similar thing was always created by the process. Mill's world would be physically most extraordinary. The world's work would be enormously facilitated if hats or locomotives or tons of coal could be thus multiplied by anyone possessed originally of two pairs. But the laws of mathematics would not be affected. It is because this is true that arithmetic is a priori. Its laws prevent *nothing*; they are compatible with anything which happens or could conceivably happen in nature. They are, true in any possible world. Mathematical addition is not a physical transformation. The only bringing together it implies is in the mind; if translation in general affected numerical alteration, we should always count things *in situ*, but we should count and add as usual. Physical changes which result in an increase or decrease of the countable things involved are matters of everyday occurrence. Such physical processes present us with phenomena in which the purely mathematical has to be separated out by analysis. It is because we shall always separate out that part of the phenomenon not in conformity with arithmetic and designate it by some other category – physical change, chemical reaction, optical illusion – that arithmetic is a priori. *Its laws constitute criteria of our categorial classification and interpretation.* As this example serves to illustrate, such categorial interpretation of the concrete and empirical throws out of court whatever would otherwise violate the a priori principles which embody the category, but it does not thereby legislate anything phenomenal out of existence.

Perhaps, however, we have gone too far. Mill's illustration is of an alteration of experience in general which is too simple and too poorly carried out to make it plausible that our categorial interpretation would be different in such a world. But if translation in general affected numerical alteration then an entirely different mode of categorial interpretation might better serve the purposes. Our present categories would not – *could* not – be prohibited but other modes might more simply reduce the phenomenal to order and facilitate control. Or in such a world, arithmetic might be confined to mental phenomena – since these would be exempt from the effects of change of place – and numerical principles would be laws of psychology. If we were jelly-fish in a liquid world, we should probably not add at all, because the useful purposes served by such conceptions would be so slight. Still if some super-jelly-fish should invent arithmetic by a *jeu d'esprit* (as Hamilton invented quaternions) he would find nothing in any possible experience to controvert it, and he might with some profit apply it to his own distinct ideas.

The ideal illustration of the a priori in applied geometry would be a consideration of physical relativity, showing how geometrical truth may turn upon

the place where the dividing line is drawn between the properties of *space* and those of *matter*. Applied geometrical principles are a priori true of all space-filling things. But this a priori truth has its pragmatic aspect since there are these alternatives about the manner in which the category of "the spatial" shall be bounded. But to carry out this illustration in detail would be beyond my competence.[4]

Incidentally it may be pointed out that the ideas which have gained currency through relativity-theory make clear the nature of Kant's mistakes in the supposition of a limited form of spatial intuition. For Kant, the spatial or geometrical has to do with relations of the simultaneous; the shape of a triangle, for example, is something instantaneously imaginable. But for celestial triangles, such instantaneous intuition has no meaning; what exists or happens at a distance is not directly verifiable here and now; a passage of something through time, as well as space, is inextricably bound up with the determination of the distant fact. Hence the imagination of a "curved space" need not mean something like flattening out a hemisphere without disturbing the relations of great circles on its surface. It means only imagining *certain uniform sequences* to characterize our experience of the spatial under certain conditions. The "unimaginable" character of curved space in the sense that we cannot visualize a non-Euclidean triangle on the blackboard, has nothing to do with the matter. Triangles on different scales have different "shapes" in non-Euclidean space, and triangles big enough to "verify" the nature of space are too big to "imagine." Our ancestors who believed the earth was flat could certainly "imagine" a non-Eucidean space, in the only sense which is required, since the geometry of the earth's surface is (in an obvious sense) Riemannian.

The a priori element in natural sciences goes much deeper than might be supposed. All order of sufficient importance to be worthy of the name of law depends eventually upon some ordering by mind. Without initial principles by which we guide our attack upon the welter of experience, it would remain forever chaotic and refractory. In every science there are fundamental laws which are a priori because they formulate just such definitive concepts or categorial tests by which alone investigation becomes possible.

A good example of this is to be found in Einstein's little book "Relativity."[5] The question under discussion is the criteria of simultaneity for events at a distance. Suppose the lightning strikes a railroad track at two places, *A* and *B*. How shall we tell whether these events happen at the same time? "We ... require a definition of simultaneity such that this definition supplies us with

[4] The reader may also be referred to Poincaré's "Science and Hypothesis," the section on "Space and Geometry."

[5] Pp. 26–8: italics are the author's.

a method by which ... we can decide whether or not the lightning strokes occurred simultaneously. As long as this requirement is not satisfied, I allow myself to be deceived as a physicist (and of course the same applies if I am not a physicist) when I imagine that I am able to attach a meaning to the statement of simultaneity....

"After thinking the matter over for some time you then offer the following suggestion with which to test simultaneity. By measuring along the rails, the connecting line *A B* should be measured up and an observer placed at the mid-point *M* of the distance *A B*. This observer should be supplied with an arrangement (*e.g.*, two mirrors inclined at 90°) which allows him visually to observe both places *A* and *B* at the same time. If the observer perceives the two flashes at the same time, they are simultaneous.

"I am very pleased with this suggestion, but for all that I cannot regard the matter as quite settled, because I feel constrained to raise the following objection: 'Your definition would certainly be right, if I only knew that the light by means of which the observer at *M* perceives the lighting flashes travels along the length *A–M* with the same velocity as along the length *B–M*. But an examination of this supposition would only be possible if we already had at our disposal the means of measuring time. It would thus appear as though we were moving here in a logical circle.'

"After further consideration you cast a somewhat disdainful glance at me – and rightly so – and you declare: 'I maintain my previous definition nevertheless because in reality it assumes nothing whatever about light. There is only one demand to be made of the definition of simultaneity, namely, that in every real case it must supply us with an empirical decision as to whether or not the conception which has to be defined is fulfilled. That light requires the same time to traverse the path *A–M* as for the path *B–M* is in reality *neither a supposition nor a hypothesis* about the physical nature of light, but a *stipulation* which I can make of my own free-will in order to arrive at a definition of simultaneity.' ... We are thus led to a definition of 'time' in physics."

As this example well illustrates, we cannot even ask the questions which discovered law would answer until we have first by a priori stipulation formulated definitive criteria. Such concepts are not verbal definitions nor classifications merely; they are themselves laws which prescribe a certain behavior to whatever is thus named. Such definitive laws are a priori; only so can we enter upon the investigation by which further laws are sought. Yet it should also be pointed out that such a priori laws are subject to abandonment if the structure which is built upon them does not succeed in simplifying our interpretation of phenomena. If, in the illustration given, the relation "simultaneous with," as defined, should not prove transitive – if event *A* should prove simultaneous with *B* and *B* with *C*, but not *A* with *C* – this definition would certainly be rejected.

Indeed *all* definitions and *all* concepts exercise this function of prescribing fundamental law to whatever they denote, because everything which has a name is to be identified with certainty only over some stretch of time. The definition provides criteria of the thing defined which, in application, become necessary or essential laws of its behavior. This is especially evident in the case of scientific definitions because the "things" of science are of a deep-lying sort, representing uniformities of behavior of a high order.[6] If definition is unsuccessful, as early scientific definitions mostly have been, it is because the classification thus set up corresponds with no natural cleavage and does not correlate with sufficiently important uniformities of behavior. Early attempts to reduce phenomena to law are based upon the "things" of common-sense which represent classification according to properties which are relatively easy of direct observation and impressive to the senses. When such attempts fail, it is largely because of this superficiality of initial classification. The alchemist's definitions of the elements, for example, are the clue to his indifferent success; the definitive properties pick out amorphous groups which have little significance of further uniformity. Not until such crucial properties as combining weights become the basis of classification is it possible to arrive at satisfactory laws of chemistry. The earlier definitions can not be said to have been false; they were merely useless, or insufficient to the purposes in hand. A large part of the scientific search is, thus, for *things worth naming*.

We have reached a point today where we understand that the typical procedure of science is neither deduction from what is self-evident nor relatively certain nor direct generalization from experience. If any one method is more characteristic of science than another it is that of hypothesis and verification. But we seem still to overlook the fact that the *terms* in which hypothesis and law are framed themselves represent a scientific achievement. We still suffer from the delusion that fixed and eternal categories of human thought on the one side are confronted with equally fixed and given "things" on the other. Is it not obvious, to dispassionate observation, that scientific categories and classifications are subject to progressive modification or even abrupt alteration, and that these have a directive and controlling influence upon the other phases of scientific research? And here too, as in hypothesis and verification, the development takes place, not by logical derivation from antecedent principles nor by direct formulation of empirical content, but by the hazarding of something by the mind and its retention or repudiation according to the success or non-success of what is based upon it. The test of success here is not, however, simple conformity with experience, as in the testing of hypothesis, but is the achievement of intelligible order amongst the phenomena in question, and responds also to such criteria as intellectual simplicity, economy, and comprehensiveness of principle.

[6] See Appendix A.

The reader will perhaps feel that, in so far as this is true, what is here represented as a priori is nothing of the sort but is merely something that we learn from experience. But if so, I hope that he will reread the illustration from Einstein, with due regard for the logic of it. However much the give and take between the purposes of science and discovered fact may contribute to alter the procedure by which those aims are sought, and may induce new basic principles and categories, still the naming, classifying, defining activity is at each step prior to the investigation. We cannot even interrogate experience without a network of categories and definitive concepts. Until our meanings are definite and our classifications are fixed, experience cannot conceivably determine anything. We must first be in possession of criteria which tell us what experience would answer what questions, and how, before observation or experiment could tell us anything.

The uniformities which science seeks are of a high order and represent a further reach of those same purposes exhibited on a humbler scale by the uniformities of common sense comprehension. The categorizing and classifying activity of thought is, thus, more deliberate and self-conscious in the case of science and, by comparison, easier to observe than in the case of common sense. Because scientific categories are in some part built upon more basic distinction, the functioning of them as criteria of the real is less frequent and perhaps less important. It is, nevertheless, sometimes to be observed in the interplay between new principles of scientific interpretation and residual phenomena which are unexplained or reports of observation which are regarded as possibly involving error. If Röntgen had been unable to repeat the experience in which he first saw the bones of his hand, that perception would have been discredited. Because no one but their discoverer could see the "N-rays" with any assurance, and it was found that he saw them when the refracting prism was removed as well as with it, they were discarded as illusory. The phenomena of hypnotism remained for a long time in the limbo of the dubious, and even today offer a difficult problem of separation of veridical phenomenon from illusion, self-deception and the like. The phenomena of "dual personality" would challenge a very fundamental category if only there were not so much doubt about what it is that is "dual" and whether it is genuinely dual. To choose a different sort of example when the eclipse-photographs which figured in the discussion of relativity were examined, the question was raised whether the star-displacements as measured on them represented simply the bending of light-rays or were due in part to halation of the sensitive film. Thus, for a moment at least, so fundamental a problem as that of abandoning the categories of independent space and time was intertwined with the question whether the position of dots on a photographic plate represented authentic star-photographs or was due to something which took place inside the camera.

What needs to be observed here is at once the continuity of scientific problems of a high order with the apparently simple and fundamental criteria of the real, and the fact that such decisions of reality or unreality are themselves interpretations involving principles of the same order as scientific law. They are such as forbid, for example, the non-biological transformations and non-physical successions which occur in dreams. A mouse which disappears where there is no hole, is no real mouse; a landscape which recedes as we approach, is but illusion. The reality of an object of a particular sort is determined by a certain uniformity of its behavior in experience. The formulation of this uniformity is of the type of natural law. So far, such laws are a priori – for this particular sort of thing; the experience which fails to conform to the law is repudiated as non-veridical.

This situation is most paradoxical; principles of the order of natural law are reached by some generalization from experience – that is, from *veridical* experience; there are no generalizations whatever to be had from the unsorted experience of real and unreal both. But what experience is veridical, is determined by the criterion of law. Which is first, then; does the content of experience validate the law or does the law validate the experience in attesting its veridical character? The answer is that the law is first precisely so long as and so far as we are prepared to maintain it as criterion of the real. But the "reality" which is in question is likely to be of a highly specific sort. The authentic photograph of stars and the picture affected by halation, for example, are both real, both physically real, both photographs even, in a certain sense. What is an "authentic photograph" has to be very precisely defined in the case in point and is so defined as to exclude the effect of light reflection from the back of the glass of the photographic plate. The manner of this definition or classification obviously will require a correlation of photograph and thing photographed of the type set forth in certain physical laws. In the particular case, failure to exhibit such lawful relationship condemns the phenomenon as not authentic or not real – that is, not really this very specific sort of thing.

Thus all concepts, and not simply those we should call "categories," function as criteria of reality. Every criterion of classification is criterion of reality of some particular sort. There is no such thing as reality in general; to be real, a thing must be a particular sort of real. Furthermore, what is a priori criterion of reality in one connection may be merely empirical law in some other – for example, the law correlating photograph and thing photographed, or the law of the behavior of solid bodies in translation which condemns the mouse that disappears without a hole, or the laws of perspective which exclude a landscape which recedes as we approach it. *The determination of reality, the classification of phenomena, and the discovery of law, all grow up together.* I will not repeat what has already been said so often about the logical priority of criteria; but it should be observed that this is entirely

compatible with the shift of categories and classifications with the widening of human experience. If the criteria of the real are a priori, that is not to say that no conceivable character of experience would lead to alteration of them.

For example, spirits cannot be photographed. But if photographs of spiritistic phenomena taken under properly guarded conditions, should become sufficiently frequent, this a priori dictum would be called in question. What we should do would be to redefine our terms. Whether "spook" was spirit or matter, whether the definition of "spirit" or of "matter" should be changed; all this would constitute one interrelated problem.

What would prove to you that the relative motion of a body effected a foreshortening of it and altered its mass? If the answer is "no conceivable experience" and you are able to formulate a definition of "mass," a conception of motion, and of ideally exact measurement in terms that do not conflict with one another and with your other physical conceptions, there is no possible ground on which you could be proven wrong. To a mind sufficiently resolute for an independent space and time, no possible experience could prove the principles of relativity. The question, "How long shall we persist in holding to our previous categories, when confronted with star-photographs and the displacement of spectrum-lines (or with spiritistic phenomena or evidence of telepathy) ?" is one which has no general answer. A stubborn conservatism can be proved unreasonable only on the pragmatic ground that another method of categorial analysis more successfully reduces all experience of the type in question to order and law. Confronting such a problem, we should reopen together the question of definition or classification, of criteria for this sort of real, and of natural law. And the solution of one of these would probably mean the solution of all. Nothing could *force* a redefinition of "spirit" or of "matter." A sufficiently fundamental relation to human bent or to human interests would guarantee continuance unaltered even in the face of unintelligible and baffling experience. And no equipment of categories and concepts which the mind is likely to achieve will enable us to understand experience completely and in every respect. In such problems, the mind finds itself uncompelled save by its own purposes and needs. What is fixed datum and must be conformed to, is only that welter of the given in which not even the distinction of real and unreal is yet made. The rest is completely and exclusively our problem of interpretation. I *may* categorize experience as I will; but what categorial distinctions will best serve my interests and objectify my own intelligence? What the mixed and troubled experience will be – that is beyond me. But what I shall do with it – that is my own question, when the character of experience is before me. I am coerced only by my own need to understand.

It would indeed be inappropriate to characterize as a priori a law which we are prepared to alter in the light of further experience even though in an isolated case we should discard as non-veridical any experience which failed

to conform. But the crux of the matter lies in this; beyond such principles as those of logic and pure mathematics whose permanent stability seems attested, there must be further and more particular criteria of the real prior to any investigation of nature. Such definitions, fundamental principles and criteria the mind itself must supply before experience can even begin to be intelligible. These represent more or less deep-lying attitudes, which the human mind has taken in the light of its total experience up to date. But a newer and wider experience may bring about some alteration of these attitudes even though by themselves they dictate nothing as to the content of experience, and no experience can conceivably prove them invalid.

It is the a priori element in knowledge which is thus pragmatic, not the empirical. The pragmatists generally have neglected to make the separation of concept and immediacy, with the result that they seem to put all truth at once at the mercy of experience and within the power of human decision or in a relation of dependence upon the human mind. But this would be an attempt to have it both ways. The sense in which facts are brute and given cannot be the sense in which the truth about them is made by mind or alterable to human needs. To be sure, this a priori element in knowledge runs very deep; it is present whenever there is classification, interpretation, or the distinction of real from unreal – which means that it is present in all knowledge. So I suppose it must be admitted, in the last analysis, that there can be no more fundamental ground than the pragmatic for a truth of any sort. Nothing – not even direct perception – can force the abandonment of an interpretive attitude, nor indeed *should* move us to such abandonment (since illusion or mistake is always possible) except some demand or purpose of the mind itself. But certain important ends, such as intellectual consistency and economy, completeness of comprehension, and simplicity of interpretation, occupy a place so much higher, for the long-run satisfaction of our needs in general, that they rightfully take precedence over any purpose which is merely personal or transitory. In the popular mind especially, pragmatism too often seems to connote the validity of rather superficial and capricious attitudes – for instance, the justification of belief from no deeper ground than personal desire. It is this insufficient regard for intellectual integrity, this tendency to trench upon high-plane purposes from low-plane motives which marks the kind of "pragmatism" which is to be eschewed. We must all be pragmatists, but pragmatists in the end, not in the beginning.

In another respect also, there is a connotation of "pragmatism" which more or less prevails, which is inapplicable to the theory here presented. Concepts and principles of interpretation are subject to historical alteration and in terms of them there may be "new truth." But the situation in which this happens needs analysis. It does not mean the possibility of new truth in any sense in which new truth can genuinely contradict old truth. This may not at first be clear. New ranges of experience such as those due to the invention of the

telescope and microscope have actually led to alteration of our categories in historic time. The same thing may happen through more penetrating or adequate analysis of old types of experience – witness Virchow's redefinition of disease. What was previously regarded as real – *e.g.*, disease entities – may come to be looked upon as unreal, and what was previously taken to be unreal – *e.g.*, curved space – may be admitted to reality. But when this happens *the truth remains unaltered and new truth and old truth do not contradict.* Categories and concepts do not literally change; they are simply given up and replaced by new ones. When disease entities give place to mere adjectival states of the organism induced by changed conditions such as bacteria, the old description of the phenomena of disease does not become false in any sense in which it was not always false. All objects are abstractions of one sort or another; a disease entity is found to be a relatively poor kind of abstraction for the understanding and control of the phenomena in question. But in terms of this abstraction any interpretation of experience which ever was correctly made will still remain true. Any contradiction between the old truth and the new is *verbal only*, because the old word "disease" has a new meaning. The old word is retained but the old concept is discarded as a poor intellectual instrument and replaced by a better one. Categories and precise concepts are logical structures, Platonic ideas; the implications of them are eternal and the empirical truth about anything given, expressed in terms of them, is likewise through all time unalterable.

In the typical case in which old methods of interpretation are discarded in favor of new ones, it requires new empirical data, which offer some difficulty of interpretation in the old terms, to bring about the change. Any set of basic concepts has vested interests in the whole body of truth expressed in terms of them, and the social practices based upon them. The advantage of the change must be considerable and fairly clear in order to overcome human inertia and the prestige of old habits of thought. Such new and recalcitrant data, which bring about the change, complicate the problem of comparing the "new truth" with the old. The factors which need to be considered are: (1) the two sets of concepts, old and new, (2) the expanding bounds of experience in which what is novel has come, to light, (3) the conditions of the application of the concepts to this new body of total relevant experience.

In the case of the Copernican revolution, for example, it was the invention of the telescope and the increasing accuracy of observation which mainly provided the impetus to reinterpretation. But these new data were decisive only in the pragmatic sense. Those who argued the issue supposed that they were discussing a question of empirical fact. But since there is no absolute motion, the question what moves and what is motionless in the heavens is one which cannot be settled by experience alone. The fixed stars prove to be a highly convenient frame of reference, resulting in relatively simple generalizations for the celestial motions, and enabling celestial and sublunary

phenomena to be reduced to the same equations, while almost insurmountable complexity and difficulty attend the choice of axes through the earth. Theoretically, however, if any system of motions is describable with respect to one set of axes, it is also describable in terms of any other set which moves with reference to the first according to any general rule. Let us imagine for a moment that this theoretically possible description of astronomical and physical phenomena in terms of a motionless earth had been worked out for all the data now at hand. In terms of which set of concepts, old or new, should we have the truth? Obviously in both. The one would be comprehension and simple truth; the other so complex as to be almost or quite unworkable. But they would no more contradict each other than a measurement in pounds and feet contradicts one in grams and meters.

This situation is not altered by any thought that newly discovered fact may play another than the pragmatic rôle and be decisive of truth in a deeper sense. Nobody has ever supposed that what were only hypotheses or empirical generalization of a high degree of probability were incapable of being disproven by new facts. To the extent that newly discovered empirical evidence may render old principles theoretically impossible, the old truth never was anything but hypothesis and is now proved flatly false. It is not, I hope, the point of the pragmatic theory of knowledge to reduce all truth thus to hypothesis. That would be nothing but a cheerful form of skepticism.

Rather the point of the pragmatic theory is, I take it, the responsiveness of truth to human bent or need, and the fact that in some sense it is made by mind. From the point of view here presented, this is valid, because the interpretation of experience must always be in terms of categories and concepts which the mind itself determines. There may be alternative conceptual systems, giving rise to alternative descriptions of experience, which are equally objective and equally valid, if there be not some purely logical defect in these categorial conceptions. When this is so, choice will be determined, consciously or unconsciously, on pragmatic grounds. New facts may cause a shifting of such grounds. When historically such change of interpretation takes place we shall genuinely have new truth, whose newness represents the creative power of human thought and the ruling consideration of human purpose.

The separation of the factors, however, reveals the fact that the pragmatic element in knowledge concerns the choice in application of conceptual modes of interpretation. On the one side, we have the abstract concepts themselves, with their purely logical implications. The truth about these is absolute, in the fashion in which pure mathematics offers the typical illustration. Such purely abstract a priori truth answers only to the criteria of consistency and adequacy. It is absolute and eternal. On the other side, there is the absolute brute-fact of given experience. Though in one sense ineffable, yet the given is its own fashion determinate; once the categorial system, in terms of which it is to be interpreted, is fixed, and concepts have been assigned a denotation

in terms of sensation and imagery, it is this given experience which determines the truths of nature. It is between these two, in the choice of conceptual system for application and in the assigning of sensuous denotation to the abstract concept, that there is a pragmatic element in truth and knowledge. In this middle ground of trial and error, of expanding experience and the continual shift and modification of conception in our effort to cope with it, the drama of human interpretation and the control of nature is forever being played. That the issues here are pragmatic; that they do not touch that truth which still is absolute and eternal – this is the only thing that would save those who appreciate the continually changing character of this spectacle from skepticism.

EXPERIENCE AND ORDER

C. I. Lewis. "Experience and Order." *Mind and the World-Order: Outline of a Theory of Knowledge* (New York: Charles Scribner's Sons, 1929), chap. 11, pp. 345–391.

Since empirical knowledge is exclusively knowledge of probabilities, the validity of it in general depends upon the validity of induction and probability-judgment. The preceding chapter has been written as if some principles of such inference may be presumed as valid. That presumption, however, requires justification, particularly since the grounds upon which it is often supposed to rest have here been repudiated. Let us phrase the issue as sharply as possible: Concepts are of the mind. All knowledge is in terms of concepts, and the possibility of it depends upon their applicability to experience. The application of a concept requires always a certain orderly sequence in experience. But the content of experience is independent of the mind; that order is discoverable in possible experience, cannot be dictated by the knower. If generalization is to be possible – if concepts are to be applicable in distinguishable classes of cases, and if the connection of concepts in such generalizations is to find its application in reality – then the givenness of certain qualia, or complexes of such, must be a clue to expected sequences, and the occurrence of such sequences in the past must be a ground of their valid prediction for the future.

However, it is *not* requisite that such expectation and predication should be *certain*. Knowledge of particular objects is never beyond the possibility of mistaken apprehension; and empirical generalizations are, theoretically, never more than highly probable. What is requisite, then, in order that empirical knowledge should be valid, is that this connection of given qualia with expected sequences, and the connection between the sequences prescribed by one concept and that which is essential to some other, should be genuinely probable. In general there must be the possibility of arguing from past to future; not with certainty, but with probability.

Concerning probability-judgments, it has been pointed out, first, that their validity does not require that what is judged probable should be true – not even that the particular generalization should be true of any specifiable proportion of actual cases. Second, the probability-judgment is relative to the pertinent knowledge of him who makes it; and this relativity is no bar to its validity. Third, this relativity of the probability-judgment to its premises

means that its validity, in the particular instance, consists in a certain relation between the conclusion and its ground; and means also that if it is valid it is true, absolutely and eternally. These three characters of probability-judgments rest upon obvious facts which cannot be denied without destroying the distinction between probability and certainty. It is an immediate consequence of them that a particular empirical judgment, if it represents a probability-inference justly drawn from its grounds, is absolutely true knowledge. The one remaining question is whether there are any valid principles of such inference according to which a particular empirical judgment may be justly drawn. If probability-judgment *in general* may be valid then there is no further ground of doubt that empirical judgments which are rational are true.

For the ideal completion of the argument, presentation and detailed examination of the principles of probability-inference and induction – as well as of our categorical concepts – would be in order. But the reader will not ask for that in the present book – another of at least equal length would be required. The particular ground of possible doubt is obvious enough: the applicability of concepts and the argument from past to future, require the presence of some order and uniformity. In an experience whose content is independent of the mind, it may be thought that such order could conceivably be lacking, and that the presumption of it is, therefore, dogmatic and without foundation. Pointing out that the validity of probability consists in a relation between the conclusion and its ground, and that the truth of what is judged probable is not directly relevant, does nothing to meet this present point. Precisely what is in question is whether a judgment which is in this sense subjective, confronting an experience which is independent, can be meaningfully relevant to the constitution of reality.

Since the applicability of concepts (or recognition of things by their appearances) as well as the validity of generalizations, is in question, the issue concerns the intelligibility of experience as well as the possibility of empirical knowledge. These two turn, for the most part, upon the same considerations.

The conclusion of which I shall hope to convince the reader is that no assumption of anything which could conceivably be false is necessary; that no sort of experience which the wildest imagination could conjure up could fail to afford a basis for intelligibility and probable judgment. The contrary assumption has frequently been due to the false conception that is *certainty* of apprehension and certainty of generalization which must be provided for. And some of those same confusions which we have found surrounding previous issues are involved here also.

I recognize that my burden of proof in this matter is a heavy one. Belief in something meant by the "uniformity of nature" is, I think, as natural to us as belief in an absolute up and down, and is supported by many habits of thought which are fundamental and pervasive. And so far as I know, it has never up till now been questioned, except by those who willingly faced a

skeptical alternative. In a sense, this belief is not to be questioned here, but rather whether it has any alternative at all; the precise problem is, perhaps, just what is involved in the necessary "uniformity." In this difficult situation, instead of proceeding directly to the center of the problem, I wish to begin with a variety of more peripheral considerations. Perhaps if a sufficient number of external buttresses are removed, the false conception will fall of its own weight.

Two points which are immediately relevant to the question of order in reality can be brought forward from what precedes; first, that reality and the content of experience are not directly synonymous, and second, that our categories are so divided that always we play a sort of game of "animal, vegetable, or mineral" with the given. It is reality, not experience, which must be orderly. Failure of a certain type of order is the criterion which excludes the given from reality (of a certain type). Thus so far as any one category is in question, our method of understanding experience is to segregate, as "reality," that part which is orderly in the required fashion; the rest is understood by being labeled "unreal." With this in mind, our rational demand that reality shall be orderly somewhat reminds one of the silly old story we used to tell as boys of the man who made a list of those he could whip: when a neighbor whose name was included belligerently affirmed, "You can't whip me," the maker of the list replied, "All right; then I'll just rub your name off." Experience has not much chance to thwart our demand for order when the failure to be orderly in certain ways merely results in its being rubbed off the list of that which it is demanded shall be thus orderly.

To be sure, what is excluded from one category must be brought under some other if it is to be intelligible. But any set of coördinate categories is simply a method for exhausting the possibilities. The "unreal" is a temporary pigeon-hole for what requires be sorting or analyzing in some further fashion. The unsatisfactoriness of such a scrap-basket category merely reflects this desirability of a further understanding of its content. But to be able to classify what is presented as "unreal" or "illusion," though it may represent only superficial understanding, means nevertheless a very important understanding, precisely because it means that this content of experience is not relevant in the present connection that it cannot figure as a negative instance of an empirical generalization and so on. So far, then, the reality presented to us in experience is certain to be intelligible and orderly, because the failure to make a certain kind of sense merely results in its being relegated to the box we keep for pi. The only question is, *how much* of experience will be reality, and how much illusion. It will be obvious that this depends, in part, at least, upon the intellectual ingenuity of the knower – his power, when some expected order fails, to discover some other which is definite to like degree. It is further clear that to the question, "How .much of given experience will be illusory?" there can be no a priori answer.

In this connection it is well to remark that our understanding of the given is always a matter of degree, and that the order demanded of reality is, similarly, more or less specific. If there is any sense in which the real must be "through and through" orderly, at least such through and through order is an ideal correlated with that "complete understanding" which is impossible to any but an absolute mind. And there must be some other sense in which predictable order is *not* demanded of the real. The reasons for this will bear a little investigation.

I find this morning on my study window a number of apparently random grayish smudges. The explanation promptly comes to mind; small children played here yesterday. Just this pattern of smudges probably never occurred before and never will again. But this failure to exhibit any definitely anticipatable arrangement excites no surprise; it is just what one expects of children's finger marks. This superficiality of our demand for order reflects, in part, the lack of any further cognitive problem. If my choicest possessions were all missing this morning, I should ask for something more. The detective would come in and, starting from a system which exhausts in certain ways the possibilities of finger-marks, would seek to establish a correlation identifying a thief. But even so, these finger marks would still fail to be uniform with anything else in *some* ways in which order could exist and might be expected. The phrase "through and through" as applied to the uniformity or order demanded of reality is rather vague.

It also suggests itself that, in the process of our learning the nature of the real, what we do is to look for *some* order of a certain general type and, if we do not find that, to look for some *other*. The first attempt at uniformity may be, for example, that sparks fly upward, water runs down hill and "Everything seeks its natural level." Balked in this, a second attempt is, "Bodies fall in proportion to their weight." Finally we have $v = g\,t$. The point here is not simply that one attempted generalization having failed, we seek another. It is that the type of uniformity first sought – a correlation between gravitational behavior and physical kinds – does not exist. Nor is there any correlation with weight. The correlation found between velocity and time is of an entirely different sort. Not order "through and through" but *some* order is what is requisite to intelligibility. And in the light of the nature of our learning process, the dictum "There must be some order in any given area of reality" takes on the character of a regulative principle, not particularly different in significance from, "If at first you don't succeed; try, try again." More explicitly and accurately, the situation may be stated thus: A certain minimal order is prescribed a priori in the recognition of the real. It is a regulative maxim of reason to seek further uniformities which may be stated in principles finally of maximal comprehensiveness and simplicity. But there neither is nor can be any prescription of the specific type of uniformity or correlation which is demanded in this interest of further intelligibility.

Moreover, the particular kind of order discoverable in one segment of the real may be definitely absent in some other segment in which it might with equal reasonableness be anticipated.

The situation is entirely comparable if we turn from the kind of uniformity necessary for generalization to the kind which is essential for the recognition of objects. A certain minimal uniformity is prescribed by the categorical classification as reality of a certain type. Further uniformity may be sought for the purpose of further classification. But the manner in which such further uniformity shall be found is not determinable – unless by some scheme of subordinate categories, exhausting the possibilities in a particular way – in advance of familiarity with the area of reality which is in question. Nor can it rationally be "demanded" that any particular degree or kind of such uniformity shall be always exhibited by experience which is intelligible. What the recognition of objects requires is some correlation between given appearance and that sequence with further experience which is requisite to identification and to discrimination of veridical from mistaken apprehension. But it cannot be required for the intelligibility of experience that within the limits of the *given* there must be that which affords the basis of such uniform correlation. If within every empirical content merely as given there were that which possessed absolute uniform correlation with that further sequence which is essential to a correct apprehension, then illusion and mistake would be possible only to the inexperienced and the fool. It is true that only the irrational need be, in the strictest sense, deceived by appearances; but this is because the rational must realize that mistaken apprehension is always possible and identification in general are only probable. The possibilities of sequence between the appearance and further experience must be at least dual wherever the experienced and intelligent observer finds even the slightest possibility of mistaken apprehension. Obviously it is not the case that every given quale or every complex of such has some uniform correlation with something else, sufficient to render it intelligible in the manner knowledge seeks, else we should all of us stand convicted of stupidity to a degree which is quite implausible.

There is another way in which it can be made evident that we cannot require that experience, in order to be intelligible, must be such that something in the given content of any experience is uniformly followed by something else in further experience. If this were the case, then within every experience merely as given must be something which determines absolutely this further experience which is predictable from it. This further experience, in turn, would likewise dictate some future experience, and so on. Thus any given experience would uniquely determine the course of future experience, or at least of some endless chain of further experiences. It may seem that this is precisely what *is* required for knowledge and prediction. But it is not: in a world so constituted whatever could be learned would not be worth knowing,

because nothing could be done about it. It is worth learning that hot stoves burn precisely because the feeling of radiated heat does *not* inevitably determine that further sequence which we first investigated to our cost, but only determines it *under certain further conditions* which we take care not to allow. There *is* a uniformity in *reality* – hot things burn – which is definable as a uniformity of *possible experience*. But the antecedent in terms of which the consequent, being burned, is determined, is something much more complex than what is confined within the given experience of radiated heat. Otherwise we should fatally go on to be burned every time we felt it, just as we did at first. Now *some* things, which are predictable, are doubtless unavoidable in experience. But even in these cases; it does not necessarily follow that they are determined consequents of given experience. It is possible – and much more likely – that here too the antecedent of which they are uniform consequents is something much larger and more complex than any previous given experience. Often our inability to avoid them is due to our ignorance of the further conditions, beyond our experience, upon which these consequents follow. If we knew enough, we could still avoid them, and that is the agony of our situation. And often also – if not universally – where some future experience is beyond our power to avoid, and would still be beyond our power even if our knowledge should be greater, it is nevertheless the case that the determining antecedent is not wholly within our experience but contains further conditions outside it but also outside our capacity to change. If it were not for these further conditions, we might still have precisely this experience and yet escape the dénouement. Quite clearly then, knowledge does not require that kind of uniformity which would mean that something given in experience is uniformly followed by something further in experience. If this were so, then life – so far as we could know and understand – would be merely a fatal unfolding of the inevitable, and our knowledge would be a worthless revelation of that fate. Even those who read life and reality in terms of such inevitable unfolding, do not condemn us to foresee it step by step merely through intelligent inspection of our given experience. As has been pointed out, those predictions which are the primary constituents of our useful knowledge of nature are of the form: Since *X* is given, if condition *Y* should be supplied, then *Z* would accrue. Where *Y* is a condition which I myself fulfill, or refrain from fulfilling, my knowledge serves to guide my action to desired ends. The sweetness of the apple, the hotness of the stove, etc., are known by means of such truth of hypothetical propositions: this round, ruddy somewhat being given, if I should bite, it would taste sweet; this visual presentation and feeling of warmth being given, if I should touch, I should be burned. As has been pointed out, if I could *do* nothing about experience, then since such hypotheticals would be meaningless, reality would be no thicker than an inevitable stream of consciousness – that is, I should not confront *reality* but at most only a fatally determined life. Knowledge of

reality serves for the control of *experience*: without the possibility of control, not only would knowledge be worthless; there would be for us no reality to know. Both the usefulness of knowledge and the meaningfulness of reality require that the uniformity apprehended by knowledge should not be such that the determining antecedent is completely contained in the experience now fixed by being given. It is required for the significance of knowledge and the real that uniformities be specifiable – as probable at least – in terms of *possible* experience. But between possible and actual experience is the whole of that which differentiates reality from mere immediacy. Whatever the uniformity of reality required for knowledge may mean, it *cannot* mean a fixed and uniform sequence in which given experience is one complete term.

It is further to the point that the whole effort of intelligence and those habits of action which are presumably its genetic antecedents, are bent to the apprehension of whatever in the given may constitute a distinguishing mark and serve the purpose of prediction. The instant mental reaction to experience, the manner in which we approach it and the way in which we abstract from it the presentation of objects, reflect millennia of nature's work to the end that we may grasp whatever in experience is clue to some uniformity of the sort which intelligibility requires. Such characters of the given arrest the attention and are for us *something*, while that which does not thus possess meaning slides off the surface of the mind; it requires a reversal of all that is natural and habitual for us to catch it, and there is no word by which it may be held. Hence it is almost inevitable that the extent to which actually given experience is uniform or contains clues to uniformity, should be exaggerated to our casual inspection.

There is another consideration which should be added to this. It is a rational demand, of at least as good standing as the demand for uniformity, that every individual object shall be unique. Such uniqueness cannot reside in the given appearance of the thing: the number of sensory qualia we can distinguish is finite, and the number of combinations and arrangements possible within the mental field of a single experience, though large, is totally inadequate to uniqueness. This uniqueness can only reside in the further specifiability of the object in possible experience continuous with the appearance of it; that is, in something which is true about the object, though it is not at this moment apparent, and something which, by appropriately directed investigation, we could learn. Hence this demand for uniqueness requires that every recognizable appearance must be correlated with some further verifiable specification of the object, in a way which is different in at least some one respect from each and every other. When the multiplicity of objects, actual and conceivable, is contemplated, it becomes clear that the extent to which experience is thus required to be non-uniform is indefinitely large.

I do not here defend the theoretical consistency of such conception of uniqueness, and I do not accuse any one of holding to it in this form; any more

than I would attribute the theory of "through and through" uniformity to anybody in particular. My object is to let one shibboleth fight another, to the end that certain vague and unexamined modes of thought may be dragged into the light and certain superstitious and equally vague beliefs about experience may be destroyed. The most that can reasonably be believed is that experience when caught in the net of our categories, will always afford *some* clue to an actually existent further uniformity of some sort. Identifiable or recognizable appearances in their continuity with further experience, must be at least as much *non*-uniform as uniform.

A further simple illustration of the way in which non-uniformity may be remarked and yet have no significance for knowledge, may be of service. There is a popular superstition that no two snow crystals ever exhibit precisely the same pattern. I have no idea what warrant there is for it, and perhaps the reader has not either. We can see that the number of possibilities of such crystalline forms is indefinitely large, but within the limits of size and of the smallest discernible element, it would be finite. Suppose that neither general uniformity nor uniqueness should obtain. Nothing in this would be baffling to our recognition of snow or our knowledge about it. Whether this illustration really serves or not, at least nature is full of such – frost-patterns, the leaves of trees, the structure of growing plants, etc. Yet those relatively slight and superficial ways in which two oak-leaves or two frost-patterns are alike, suffice for our recognition of them and our generalizations about them. A non-uniformity, to be significant for knowledge, must be very specific – it must be a negative instance of our predictive recognition or attempted generalization. And even when we are thus thwarted, we simply give up our previously held specific mark or law, and proceed to understand that kind of object *in some other way*.

Quite frequently that order which intelligibility and law require has to be sought at some one level and escapes us at other levels. A general illustration is the whole body of those phenomena recognized by science in which macroscopic uniformity is superimposed upon microscopic multifariousness. That law at the macroscopic level may even be based upon an assumed randomness of the microscopic, is instanced by the kinetic theory of gases. As is well known, it may be held that law in general has this character. Whether this theory of law as statistical generalization of random distribution at some lower level is defensible or not, at least it is of great importance that the absence of observable order which is called "chance" itself becomes a kind of uniformity and may give rise to law.

This type of consideration is, it seems to me, an observation about our modes of dealing with phenomena rather than about nature or experience. There are other types of illustration also of the fact that certain kinds of order are imposed where none is directly observable. The outstanding example is, of course, arithmetical order, which presumes nothing more than some kind

of identifiably. I do not refer here to the counting of assemblages; important though that may be, still it is less important than the serial arrangements imposed upon intensive (that is, qualitative) differences. At least I believe that this is what examination of our categories would reveal. The multiple types of such "arrangements" of what is in no sense arranged in nature or experience – either before or after – will need no comment; nor will the fact that such imposed order quite generally provides the basis in terms of which other types of order are expressed.

At the risk of going beyond what could be clear without detailed examination of our categories, I would draw attention to two characteristics of such imposed order.[1] In the first place, it allows an infinite multiplicity to be brought under a finite simplicity of rule. It may seem trivial to remark that ten characters and a rule of adding 1 give us command of infinity, but without that, or something similar, there would be no point in counting – though there might be in serial arrangement. And second, correlation between numerical order and an imposed serial arrangement of qualities extends the power of this type of order to what is in no sense countable. Such imposed order, which demands no sort of uniformity of nature beyond the persistence of identifiable characters, is at least a prime constituent of intelligibility, though without some sort of correlation between it and that further kind of order which means determinable sequence of experience, it would not possess the significance which it does.

This type of correlation can be illustrated by the case of color. The distinguishable color-qualia are not unlimited in number but are confusingly numerous, and also they are subject to the accident of indiscernible difference; *B* may be indistinguishable both from *A* and from *B*, though *A* and *C* are recognizably different. We make a virtue of this difficulty by translating the *A*–*B*–*C* qualia as a continuous series. The manner in which this procedure is systematically carried out, in the color-pyramid, needs no exposition here. It should be noted that this arrangement would permit of algebraic treatment, quite independent of any correlation between color and harmonic motions, which is a *further* order, of the type of discovered generalization.

Color also illustrates another common method of achieving simplicity; that is, by dividing a whole field of qualia into classes by the use of names with a qualitative range of denotation. "Red" or "blue" represents no single quale, but instead a considerable variety of such. That the mind could hardly make a beginning of bringing order into given experience without this device, should be evident. It is made use of wherever it is the case that no imaginable instance can completely contain or illustrate the essential denotation of the concept – as there can be no image of triangle in general or dog in general.

[1] It will occur to the reader that, according to Cassirer, such dimensional and serial arrangement is the *universal type* of conceptual order.

This assignment to a name of a range of denotation should be sharply distinguished from that abstraction of the essential and ignoring of other characters which is represented by many theories as the universal basis of general names. Such theories are, of course, inadequate in several ways.[2]

The substitution of simple classification based on resemblance for an indeterminately large number of distinguished qualia, is of considerable importance in connection with probability-judgments. For instance, there is a finite probability that this book will be bound in red, because it must be bound in red, orange, yellow, green, blue, purple, black, white, or gray, if it is bound at all. The determinable probability arises through the fact (among others) that, within the universe of discourse in question, the possibilities are exhausted by a definite number of categories.

It is evident that the last few pages have touched superficially upon a variety of topics relative to the categories, each of which is worthy of extended examination. But as has been said, these matters are not of central importance to the main issue. The points which I hope have been suggested, if not established, are the following: Reality is more orderly than experience, because reality is experience categorized. Lack of certain types of anticipated order leads to repudiation of the given content as "unreal." The "unreal" must be capable of being understood – in some other way – but understanding is always a matter of degree, and the designation "unreal" ordinarily marks that type of superficial understanding which characterizes the situation in which it is important only that a particular given experience be excluded from the field or what is relevant to the problem in hand. All generalizations are based upon reality, not upon uncategorized experience. Neither reality, or nature, nor experience is orderly in the sense that what is presented may be taken in any way we please and found to exhibit uniformity with other instances. Intelligibility does not require such "through and through" uniformity but only *some* uniformity. What such uniformity shall be, we do not dictate to experience, save that specific kinds are requisite to subsumption in particular categories. Beyond that, the rational demand for uniformity wears somewhat the appearance of regulative ideal, or maxim for the conduct of investi-

[2] The real basis of classification of the kind in question is, of course, similarity. Similarity is of two types, partial identity and resemblance proper. A spatial or temporal whole, like a contour or a melody, may be divisible into parts some of which may be qualitatively identical. But similar color-qualities are an instance of the other type. Resemblance means the possibility of confusion. It is apprehended by conscious or unconscious recognition of this possibility. A man "looks like" my brother if, at a quick glance or at a distance, I might mistake him for my brother. Things are more or less similar according as optimum conditions must be more or less nearly approached for distinction to be made. Partial identity may also be included under this rubric. It should be noted that recognition of similarity is a kind of latent generalization.

gation. Intelligibility and understanding are not incompatible with irreducible variety; such lack of uniformity may be irrelevant to the particular mode of cognition. Further, we seem to have a theoretical interest in unlimited variety, as is evidenced by our requirement of uniqueness in the individual thing. Again, much of the basic uniformity of various areas of experience is not discovered but imposed by categorical procedures which argue nothing intrinsically orderly in what is given. Outstanding examples are the serial and dimensional orderings of qualitative variety, as well as schematic classifications, on the basis of similarity, by which an indefinitely large range of possible variety is brought within a definitely limited number of alternatives.

If now, I may suppose that this inadequate examination will be sufficient to guard against the commoner misapprehensions about the "uniformity of nature," I should like to proceed to those considerations which I believe to be really central for our problem. What is required in the way of order if experience is to be intelligible and knowledge possible is only that there should be apprehensible things and objective facts – and to this we can conceive no alternative whatever, unless it be the non-existence of everything.

As should now be evident, the existence of an apprehensible thing is not assured by the mere givenness of experience, though if there were no things for us, there would be, in an obvious sense, no experience. Things exist for our apprehension as certain sequences of possible experience, of which given presentations are probable indices. For this, the sole necessity is that, certain presentations being given, the possibilities of further experience should not be unlimited; that is, that it should not be the case that every recognizable appearance is equally associated with, or followed by, every other. Let us give this fundamental requirement of knowledge formal statement: *Principle A*; It must be false, that every identifiable entity in experience is equally associated with every other. This principle is what Mr. Keynes has called the "limitation of independent variety,"[3] except that it is here applied to the identifiable constituents in experience, particularly with reference to their sequence, instead of to the qualities of objects with reference to their correlation in reality.

What I wish to point out is, first, that this single requirement satisfies everything which is necessary, in the way of order in experience or reality, for the validity of empirical generalizations, based on past experience and applicable to the future; and second, that although this has the appearance of a limitation of the possibilities of experience it has in the end no alternative. To put it in paradox; every possible experience is *ipso facto* a possibility of experience, but it is not possible that all possibilities should be actual. Any possibility is a possible actuality, but it is not possible that all possibilities

[3] *A Treatise on Probability*. Ch. XXII.

should be concomitantly real. The coincident actuality of all possibilities is impossible. Thus the requirement that actuality be a limitation of the all-possible, is not itself a limitation of the possibilities. Instead, it is something which could not conceivably fail to be the case; there is no alternative.

Let us turn first to the requirement that there should be apprehensible things and objective facts. As has been pointed out, the existence of things and the possibility of our knowing them – in the only sense in which we *can* know them – does not require that what we attempt to regard as things should be in each and every case objective realities. Given appearance is no more than a probable index of the existence of such a particular reality. Furthermore, any particular substantive concept, even though it should be current for a thousand years, may eventually turn out to represent, not an objective thing, but a mistaken reification. The concatenation in experience which the applicability of the concept requires may not, in fact, obtain. There may be no unicorns; there may be no disease entities; there may be no such thing as the soul. If the reality of knowledge required that every uniformity which we seek, by the invention of a concept to designate it, should be present in possible experience, or if it required that every given appearance should be an index to some uniformity which could be predicated with certainty, then it would not be plausible that there is any such thing as knowledge. All that is required is that given appearances should be probable indices to such uniformities as may be designated by concepts. This in turn means that statistical generalizations from the past sequences of experience must establish in some measure their probability for the future. And this, again, depends, as has been stated, upon the limitation of independent variety in the correlation between given appearances and further possibilities of experience.

The point may be made clear by an analogy which, as the reader should be warned, is incomplete but may nevertheless be useful. Suppose that we observe a certain sequence in cards, dealt from a pack, to be repeated several times. Will this establish a probability of its future repetition? If we may suppose some limitation of the possibilities, such as adhering of the cards or trickery in the deal, it may. But if we suppose no such limitation upon those ideal conditions which packs of cards and their shuffling are meant to approximate, then even numerous repetitions of an observed run will not in the least increase the antecedent probability of its future occurrence. If, then, we may compare identifiable qualia and complexes of such (recognizable appearances) to the cards, and experience in general to an ideal pack under ideal conditions, a statistical generalization of past sequences in experience could not establish that in future one such sequence should be probable as against others in which the given appearance should be the same. That is, no appearance would be probable index to further possible experience. Since what any substantive concept denotes in experience is some definite sequence or set of such, there could be, in an experience which was subject to no limitation upon the all-

possible sequence of given presentations, no recognition of things by their appearances as even probable.

But – to continue our analogy – if we can suppose the pack from which cards are dealt to be defective or the dealing subject to trickery, then a statistical generalization as to past runs will establish a genuine probability for the future, and the continued verification of such a generalization will continually increase its probability. It will still be the case that any *particular* generalization of this sort may represent "mere coincidence" in the past and fail in future. But the point which it is especially important to observe is that if the assumption that there *are* limitations which some uniformity of sequence *might* reflect is a warranted assumption, then this fact of itself is sufficient to establish the validity of the argument, in any particular case, from past uniformity to its probability for the future. If, however, it should be positively known that the runs of cards are ideally governed and subject to *no* such limitation, then there would be *no* such probability. The especial point here is that the validity of arguing from any past coincidence to its probability in the future does not depend upon our knowing any *particular* ground for this *particular* uniformity (other than its past occurrence), but does depend upon our knowing – as at least possible – a ground for such uniformities *in general*.

So far the point of our analogy is, that the validity of arguing from the correlation between a given presentation and that further experience which means a particular kind of object denoted by a particular concept, does not require us to know any particular reason for that particular correlation or for the existence of just that sort of thing (other than the past experience itself). It requires us to know – as possible at least – that such correlations, things *in general*, exist. If this assumption is valid, then the prediction (as probable) of that future experience which means the verification of the presence of an object corresponding to a particular concept, from a given presentation with which such further experience has been associated in the past, is valid; and the probability is equally genuine when, as a fact, the past conjunction is a "mere coincidence" which future experience will prove not to be valid as a generalization. That is, mistaken apprehensions, as *probable judgments*, will, if there has been no logical error in the judgment, be valid, as much as those which are actually verified by the future.

It is also to be noted that, if the assumption that things in general exist should be valid, then the probability for the future of the correlation between a given presentation and certain further experience will be increased with each successive verification of that correlation. The particular principles of probability upon which this rests need not be examined here;[4] the reader will perhaps be satisfied upon the point by consideration of the analogy: if we have ground for assuming poor shuffling or interference or some such limitation,

[4] Of this point, see Keynes, *A Treatise on Probability*. Ch. XX.

the probability for the future of a particular run which has been repeated will increase with each repetition of it. At least this will be so after a certain number of repetitions have already occurred, if we suppose the conditions unaltered.

This assumption of the existence of things, that is, of certain recurrent correlations in the sequence of possible experience, is all that is required for the validity, as probable, of empirical generalizations or "laws," and of the argument from past to future with respect to these. It will be evident from previous chapters that the existence of objective properties is conditional upon precisely this same type of uniform sequence in experience. The verification of such properties requires precisely the same connection between given appearances and further possible experience, and requires nothing more. Obviously the assumption of objective properties is involved in the assumption of things. Furthermore, if things exist, which are cognizable and therefore the objects of possible concepts, it is evident that there must be laws. Laws prescribe, or describe, precisely such uniform sequences. In fact, although laws or empirical generalizations formulate relations of objects, or properties of objects, which are non-essential rather than essential, this difference is irrelevant to the possibility of knowledge. What is essential in a thing is determined by the particular concept which it serves our interest to apply, rather than by anything else. The properties essential to "a stone" do not include its being "a freely-falling body," and the essential properties of a "freely-falling body" do not include its being a stone. But certain laws or generalizations must hold of an object in order that it be a stone and certain others must hold in order that it be a freely-falling body. The laws which characterize or constitute essential properties of freely-falling bodies are non-essential or merely empirical generalizations about stones under certain circumstances. Moreover, not only are all essential properties capable of representation as laws, but every empirical generalization is such that some substantive concept is capable of being framed so as to require conformity to it as the distinguishing or essential property of a particular kind of thing. Scientific concepts especially have this character explicitly; they define or classify objects on the basis of their conformity to certain laws, prescribing modes of behavior. Indeed, any objective fact – meaning by this any state of affairs which is describable in conceptual terms – is a property of objects and may be denoted by a substantive concept marking it as essential. In fact, unless the whole point of the last two chapters has been lost, it will be clear that the difference between essential and non-essential properties, and between prescriptive laws and empirical generalizations, is one determined by pragmatic considerations of the particular interests our knowledge is to serve which dictate particular modes of analysis, rather than by any difference in the objective state of affairs upon which these are directed. *What* laws *must be* valid, would depend upon what things exist; but the general assumption

that there are things (of some sort) includes the assumption that there are valid generalizations of the type of law. If there could not be a world without the uniformities of possible experience requisite to the existence of things, then there could not be a world without uniformities of the type of law.

As is the case with things, so too with law, the validity of the prediction that a particular generalization which has held in the past will likewise hold in future, depends upon the general assumption that *there are* laws. If there are such uniform sequences as laws describe, then the occurrence of one such in the past establishes a probability of it in future, and each successive verification increases that probability. And here, too, the probability-judgment, if logically drawn, will be valid even in those particular cases in which future experience will prove past instances to have been "mere coincidences" and the generalization to be false.

Thus the assumption that things exist – that there are (some) such recurrent sequences as substantive concepts require for their application – is sufficient to secure the validity of knowledge in general, when the nature of empirical knowledge is correctly interpreted as probable judgment. As has been remarked previously, the form which skepticism has often taken, of doubting the validity of all empirical generalizations while leaving unquestioned the existence of apprehensible things, in terms of which such dubious generalizations could at least be intelligibly phrased, represents a totally impossible position. It could only *seem* self-consistent on the assumption that the validity of knowledge requires the *certainty* of empirical generalization and of prediction. Since any reasonable examination of knowledge must conclude that the pretense to such certainty is unwarranted and the ascription of it is a misreading of the actual nature of science and of common-sense attitudes, what such skepticism has slain is a man of straw, though to be sure it is just this scarecrow which has frightened philosophers out of their wits for a considerable period.

Before passing on, we should remind ourselves once more at this point that the assumption of the existence of apprehensible things does not mean the assumption that experience is uniform in the sense that certain determined sequences *universally* follow upon a given first term (the presentation). If it meant that, then no apprehension of a thing would be valid unless the given presentation should be such as to render mistaken apprehension absolutely impossible. Since errors of apprehension are possible and identification of objects are probable, it follows that the prescribed sequences, requisite to the existence of things, are such as would be predictable, with certainty, only in terms of some larger whole of experience than can be included in a single presentation. Our actual predictions – our actual knowledge of things, predicated upon given presentations – is in terms of such sequences of experience as admit of exceptions such as mistake and illusion. Hence as generalizations about actual experience, the existence of apprehensible things means only such

uniformity as can be formulated in generalizations of the statistical type, which admit of exception. *No absolute uniformities* of actual experience are required either for the existence of things or for the objective character of law. Laws too, of course, are exempt from being proved false by mistaken apprehensions of the things or objective facts with which we suppose ourselves to be dealing.

The examination of the categories, "thing," "event," "property," "relation," "law," is a most difficult and complex matter. I make no pretense to have exhausted even the essential considerations for any one of these. In particular, I should not like to seem to assert that there is no difference between what is requisite to the nature of a thing and to the objectivity of law. The attempt is only to show that there could not be a world of apprehensible things in which empirical generalizations should fail of valid foundation; that if there are things then laws of the type which empirical generalization seeks to grasp must hold; and hence that such generalizations may be genuinely probable and that empirical knowledge, as the only sort of thing it can reasonably be supposed to be, is genuinely possible.

If this point is established, then the only alternative to the conception that our knowledge in general is valid, is the conception that there are no things; that nothing exists to be known and no mind exists to know it. The nearest approximation we can make to such a conception is, perhaps, that there might be an experience which is a mere flitting of meaningless presentations. But for such experience, if we can conceive it, the distinction of "real" and "unreal" could have no meaning. This being so, it is a little obscure just what we suppose ourselves to be talking about when we try to frame such a conception; perhaps about the experience of an oyster with the oyster left out.

I do not mean to take advantage of the fact that skepticism can only make itself intelligible in terms which render it not self-consistent. This is a fact, and a most important one. But it might be claimed – though I do not know that it ever has been – that skepticism intends only to exhibit a *reductio ad absurdum* of the pretense to knowledge, by beginning with definite assumptions about the mind, etc., and on that basis proving the invalidity of these assumptions along with every other.

This possible intent of skepticism seems the more important to examine because it would appear, in the above, that the account of knowledge here given avoids skepticism only by an assumption which has a conceivable alternative; and that this alternative is precisely the absence from experience of all order of the kind which means significance and intelligibility. In this situation, it might be said: "It is not humanly possible to divest ourselves of assumptions – such as the existence of definitely conceivable things – which have no rational foundation, and still talk or think, but it is possible to be sufficiently self-critical to realize that such unavoidable assumptions are nonrational and mere 'animal faith'."

I believe this to be demonstrably false, and shall attempt to make this fact clear. But before approaching that topic, there are two points about skepticism with the above meaning, which it may be well to observe.

Historically there have been two main grounds of skeptical conceptions, the relativity of sense-perception and the absence of "necessary connections" in experience. Quite often these are confused together and results appropriate only to the first are added to the second. It is the first of these only which gives plausibility to the conception that there is a reality which is unknowable to us because we are separated from it by the manner of our apprehension. This ground of skepticism has, I hope, been dispelled by the considerations of previous chapters. It neglects the fact that "real" is systematically ambiguous; that "appearances" themselves must constitute one kind of reality. It also neglects the further facts that reality of any sort is definable and meaningful only in terms of *some* experience, actual or hypothetical, and that regardless of the relativity of perception, appearances inevitably are, for a rational understanding, a ground of *true* knowledge of the reality which appears even though that knowledge should be incomplete. As a result, it is impossible to conceive "reality" as completely unknowable; and since it is not plausible that, under actual or realizable conditions, reality can be *completely* known to us, the significance of the "unknowable" dwindles to the commonplace fact that humans are not omniscient. Nothing in the train of thought which starts from the relativity of perception can in any way vitiate such knowledge as we *have* or seem to have. The ground of this sort of skepticism is the false conception of knowledge as representation.

The other type of skepticism turns upon a correct conception of knowledge as predictive judgment. Its particular ground is the absence of "necessary connections of matters of fact." This may well be equivalent to the falsity of the assumption which has here been shown requisite to the existence of apprehensible things. Actually, of course, Hume supposed that necessary connections must mean such iron-clad uniformities in experience as would enable certainty of prediction, whereas it is only genuine probability which is requisite. But I hope it will be clear that if this is the ground of skepticism, it is quite unwarranted to supplement this conception by a notion of a reality somehow concealed from us by the chaotic character of experience. The *logical* conclusion would be that of Gorgias, "Nothing is," or at least the admission that we can have no rational ground for asserting a reality of any sort. If we cannot humanly avoid this, that is merely to observe the fundamentally irrational character of our "animal faith" and the *reductio ad absurdum* of all attempts at consistent belief.

The second point to be observed before we pass on, is that we must not confuse such irrational "animal faith" with that wholly rational attitude of him who, acting on the basis of a *probable* judgment, confronts the future he predicts with the realization that the possibility of his being disappointed is

a real one. In both cases, one would face the future with an attitude determined by past experience but one which, in the particular instance, the future might prove to be fruitless. But in the one case, this attitude has no rational ground and incorporates no truth; in the other, it represents knowledge – of probability – which is not only rational but absolutely true, whatever the dénouement. If one should ask, "But what, practically, would be the difference?" that is a point which we shall reach shortly.

We come now to the main point: it is impossible to imagine any sort of experience which would not present such statistical stabilities as would validate probable prediction, and such as would represent the experience of things. Our analogy of experience to runs of cards is, on this point, as unfavorable as could easily be devised, because packs of cards and their manipulation are intelligently directed to the end of minimizing the possibilities of prediction in those respects which determine the outcome of the game. But it is worth remarking at the outset that the point of card-games, except for children, is to pit our wits against this maximal uncertainty and determine a long-run outcome favorable to ourselves in spite of it. If the sequence in experience should be as independent and lacking in "necessary connection" as the sequence of cards, that could not frustrate prediction or destroy the practical value of probability-judgments. Indeed if cards should represent, in the analogy, recognizable qualia or complexes of such in presentations, our attention should be drawn to the fact that, on this point, the analogy is better than might be supposed. There are no sequences in experience which are determinable with certainty by a given presentation alone. Real things represent stabilities of a type which enormously transcend what can be given in any one experience. If the reality of things required the presence in experience of sequences absolutely determined by a first term, then we should have no reason to believe in their existence. As has been pointed out too often already, what is required is only that a given presentation determine a probability of future possible experience.

The reason why Principle A imposes no actual limitation upon the possibilities of experience may be formulated in a second dictum: *Principle B*; In any situation (if sufficiently extended) in which there are identifiable entities which fail to satisfy Principle A – *i.e.*, whose association is "random" – there will be other entities, systematically connected with the former or specifiable in terms of them, which do satisfy Principle A. The principal methods by which we determine "orderly" constituents of experience in terms of "random" ones are by proceeding to simpler elements through analysis, by taking a larger whole into which the primary constituents may be organized, or by confining attention to *abstracted* elements, and disregarding the remainder of the given as irrelevant.

To revert to our analogy, if the sequences of cards are purely random or subject to no laws but those of chance, then the stable entities of card-games,

comparable to things, will be something such as tricks-taken, or suits, or kinds of hands such as full-houses, straights, etc. Or they will be entities of a lower order such as the pips on the cards. As is obvious, the chance character in the sequence of dealt cards does not frustrate the attempt at statistical generalizations which give guidance for successful play. Even with entities thus deliberately devised to approximate pure chance in certain ways, there are certain wholes which, neglecting the "non-essential," give rise to generalizations. In fact, no better basis for statistical generalization could be devised than the known fact that certain constituents of the situation are distributed in genuinely "random" fashion. Since any departure from "pure chance" is itself subject to generalization of some sort, a statistical basis for probable judgment cannot conceivably fail to be afforded.[5]

What particular stabilities, and what types, are to be found, cannot be prescribed to experience or reality. The *particular* order discoverable in reality, the extent of it, and the degree of its conceptual simplicity, are of course, absolute data. The supposition that we may always find law in terms of any experimental entities we please and with predetermination of the type of the uniformity to be found, is totally unwarranted and is unnecessary to the validity of knowledge. Our concepts are devised with purpose to catch the significant, the subject of meaningful generalization, at whatever level and in whatever way we may. When particular concepts fail, we merely abandon them – through analysis or organization or abstraction, and so on – in favor of corrected ones, which take cognizance of, and include the ground of, our previous failure. That conception *in general* should be invalid, is quite impossible. The attempt to envisage an experience or state of affairs such that *every* attempt to discover stabilities must fail, is the attempt to conceive the inconceivable – to conceive what would not be things or objective facts nor subject to any generalization which makes what is denoted conformable to concepts. The experience or reality which should be incompatible with conception, *ipso facto* cannot be conceived.

It may seem that there is one aspect of the matter not yet covered; the validity of the argument from past to future. It may appear that it would be possible, not only that *particular* predictions based upon the past should be useless as anticipation of the future – which their character as probable allows – but that *in general* the anticipation of the future in the light of the past is without theoretical warrant. This point really is covered by Principle A, when we remember that the kind of association of constituents in experience which is essential to their comprehension in things is sequence in possible experience. But when we remember that it is the validity of *probable*

[5] In this connection, the analogy will be improved if we think of our predictions about runs of cards as based on past runs (as they might be), not upon prior knowledge of the constitution of the pack.

prediction only which is required, the matter can be more explicitly stated, and quite simply: *Principle C*; the statistical prediction of the future from the past cannot be generally invalid, because whatever is future to any given past, is in turn past for some future. That is, whoever continually revises his judgment of the probability of a statistical generalization by its successively observed verifications and failures, cannot fail to make more successful predictions than if he should disregard the past in his anticipations of the future. This might be called the "Principle of statistical accumulation." It is quite evident that it holds even with respect to what is determined only by "pure chance" – in the only sense that we can conceive anything such. This is what is meant by saying that probability or chance is measured by that fraction which is approximated "in the long run."

Though the attempt to envisage what would frustrate conception and knowledge is, in the nature of the case, futile, it may be worth while to conceive the worst possible experience, from that point of view, by a somewhat fantastic illustration. Let us think of our experience as constituted by complexes or patterns of qualia which come to us in sequence, and let us suppose that this experience is given to us, not by a Berkeleian God who in his goodness preserves certain uniform sequences in order that we may predict experience according to natural law, but by a perverse demon whose sole purpose is to mislead us and render knowledge impossible. If the distinguishable sensory qualia should be finite in number, as they are in actual experience, this demon must necessarily repeat, but he might repeat identifiable complexes and previous sequences to as small a degree as possible. However, if, as a result, these presented patterns did not afford a sufficiently good basis for conception, we should analyze them into sub-patterns or other constituents which would be of more frequent appearance, or should classify them according to some simplified schematics based on similarity, or give them dimensional or serial arrangement approximating to an ideal continuum, or in some other fashion proceed by abstraction or reorganization or a combination of the two to circumvent the multifarious variety of the given. For the rest, the character of it would be relegated to the "non-essential" and merely mark the relative uniqueness of particular moments of experience; it would be non-significant, like the particular character of frost-patterns and snow crystals. We should be inattentive to such non-significant features of the given; and if any one should call our attention to their comparative frequency, we might regard his observation as a foolish remark about the obvious but unimportant. If the demon should likewise minimize the extent to which particular *sequences* should be repeated, he might make knowledge difficult to a degree. But at least we should presumably come to possess the very important generalization that the maximum of novelty may confidently be expected. We should organize all our conduct on the principle that "lightning seldom strikes twice in the same place" and "history never

repeats," with consequent advantage to ourselves. As a fact, however, we should circumvent the demon on this point at the same time that we attained relative simplicity of recognition, and should carry out similar procedures with reference to sequence. We should analyze, abstract, and relegate what we could not find somehow significant to the status of "irrelevant concomitants of significant 'causal' sequences." By ignoring a sufficient proportion of the characteristics of experience as it came to us, we should arrive at such simplicity that, in terms of it, even the most disadvantageous sequence of the primary constituents – *e.g.*, a "random" order – must afford some repetition and uniformity. Knowledge might be made difficult, but could not be made impossible.

This would be something as if we were required to play a game with cards dealt from a pack we never saw and could only infer from the hands dealt us, and as if these cards were dealt with trickery and malice – something worse than a good decent game of chance. But even in such circumstances, the principle of statistical accumulation would operate. If we were required to bet on this game, we might be unequal to our demon antagonist to any degree you please; our ignorance might be great, and our failures and loss correspondingly large. But by nothing which he could do could be so devise it that we should not lose *less* of our money if we intelligently observed past dealings and continually revised our betting on the basis of accumulated experience.

Indeed we need only to prod our imaginations to remark that this actual experience of ours fits the illustration better than one might suppose. Most of the pattern and sequence of our experience is non-significant; those characters which by our practical attitude we single out and remark and make prediction in terms of, are inordinately meager as compared with the total of presented distinguishable pattern and sequence of qualia. Most of experience is as non-significant as the intricate pattern of the rug I have been gazing at is to me now. Beyond a few details which suffice for recognition, this intricacy does not even draw attention, and if attended, it hardly functions as knowledge. It neither verifies anything nor baffles knowledge, because it arouses no anticipatory attitude. Confronting any given experience, the first act of intelligent cognition is to discard all but a few items of what is presented as excess mental baggage irrelevant from the point of view of our predictive purpose. It is the relatively meager remainder which constitutes the clue to expected uniformity.

Even if the hypothetical demon should have an infinite number of qualia and complexities at his disposal, instead of a finite number, it is doubtful if we should be worse off. We should merely discard more of our experience, as marking that uniqueness of each moment and each thing which is irrelevant to knowledge; we should frame our concepts and make our predictions in terms of the remainder, or of abstractions and other such imposed simplifications. On any hypothesis which can be framed about experience, however

perverse, I think it will be clear that a similar thing would hold, or else that the fantasy is not even imaginable but would merely mean the elimination of reality, of significance, of all questions and the mind itself.

In any experience such as we can, even at the worst, suppose our own to be, conception will be valid and knowledge will be possible. The three principles which have been stated will hold, and generalization will be subject to genuine probability. No further and avoidable metaphysical assumption is required. The mind will always be capable of discovering that order which is requisite to knowledge, because a mind such as ours, set down in any chaos that can be conjured up, would proceed to elicit significance by abstraction, analysis and organization to introduce order by conceptual classification and categorical delimitation of the real, and would, through learning from accumulated experience, anticipate the future in ways which increasingly satisfy its practical intent.

PRAGMATISM AND CURRENT THOUGHT

C. I. Lewis. "Pragmatism and Current Thought." *Journal of Philosophy* 27.10 (24 April 1930): 238–246.

It is somewhat difficult in the case of pragmatism to determine what are its essential and distinctive theses. That there should be thirteen distinguishable pragmatisms, however, is not a peculiarity: these could be set alongside the thirty-seven idealisms and fifty-one realisms. William James is reported to have said that be was pleased to find that pragmatism had this wealth of meaning; he accepted all thirteen. In any case, such variety merely marks the fact that pragmatism is a movement, not a system. Its beginnings are attributable to Charles Peirce. But Peirce has something the quality of a legendary figure in American philosophy. His originality and the wealth of his thinking are not fully evident in his published writings. Apart from a few persons – amongst whom were James and Royce – some of his most important conceptions can have had little influence, because they have never been printed: and the coincidence of these doctrines with the views of later pragmatists is distinctly limited. James's enthusiasm for them must in part be set down to that catholicity of appreciation which was so notable a part of his character; James called himself a "radical empiricist" as well as a pragmatist, and the connection, or lack of it, between these two aspects of, or strands in, his philosophy, has been a matter of some question. We must, of course, look to Professor Dewey's writings for the integration and systematic elaboration of pragmatism. But no one could have exercised the quite unparalleled influence which he has had upon American thought without giving rise to a wealth of resultant views which is a little confusing when one tries to grasp then coincidence or central meaning. Hence it is not a matter for surprise if those most deeply influenced by him show a tendency to drop the term, lest a too extended agreement with one another be suggested, and that those of us who still have ventured to use it are doubtful of our right to the designation.

If, then, I venture to suggest what is the core of pragmatism, and what I think may be the chief significance of it, both in philosophy and for other branches, I hope it will be understood that I do not take myself too seriously in the matter. This view is presented to those who will best know how to correct my mistakes.

Pragmatism is, as James indicated, not a doctrine but a method: viewed logically, it can be regarded as the consequence of a single principle of

procedure. But this principle, though by itself it says nothing material in the field of metaphysics or epistemology, and though its application is by no means confined to philosophy, has nevertheless a wealth of philosophic consequences. It implies at least the outline of a theory of knowledge; and if it dictates no metaphysical theses, at least it rules out a good deal which has been put forward under that caption, and it operates as a principle of orientation in the search for positive conclusions.

I refer, of course, to the pragmatic test of significance. James stated it as follows: "What difference would it practically make to anyone if this notion rather than that notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle."[1] Peirce formulated it with respect to substantive concepts rather than propositional notions – though the two come to the same thing: "Our idea of anything is our idea of its sensible effects.... Consider what effects that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object."[2] It is one importance of this pragmatic test that it is so obviously valid and final: once it has been formulated, there can be no going back on it later without conscious obscurantism. Any consequence of it, therefore, shares in this imperative and binding character. Peirce's dictum draws our attention to the fact that there is a kind of empiricism which is implicit in the pragmatic test: What can you point to in experience which would indicate whether this concept of yours is applicable or inapplicable in a given instance? What practically would be the test whether your conception is correct? If there are no such empirical items which would be decisive, then your concept is *not* a concept, but a verbalism.

If one does not find in Professor Dewey's writings any terse formulation which is exactly parallel (and of that I am not sure), this is only because here the pragmatic test is clothed with its consequences; it pervades the whole, and is writ large in the functional theory of the concept. Ideas are plans of action; concepts are prescriptions of certain operations whose empirical consequences determine their significance. This connotation of action is not, of course, a new note; it appears in Peirce's emphasis upon conduct and experiment, and in James's doctrine of the "leading" character of ideas. Is this functional theory of the concept implicit, like empiricism, in the pragmatic test?

[1] *Pragmatism*, p. 45.

[2] "How to Make Our Ideas Clear," *Chance, Love and Logic*, p. 45. Compare: "... Since obviously nothing that might not result from experiment can have any bearing on conduct, if one can define accurately all the conceivable experimental phenomena which the affirmation or denial of a concept could imply, one will have therein a complete definition of the concept, and *there is nothing more in it*. For this doctrine he [the writer, Peirce] invented the name pragmatism." – "What Pragmatism Is," *Monist*, Vol. 15, p. 177.

So far as Professor Dewey himself is concerned, it would appear that this doctrine antedates his explicit pragmatism, and may have been the root of it. (Perhaps he will tell us.) It appears in his paper on "The Reflex Arc Concept in Psychology," the first important document for "functional psychology," published in 1896.[3] He there criticizes current psychological theory as not having sufficiently avoided the fictitious abstractions of sensationalism. "The sensation or conscious stimulus is not a thing or existence by itself; it is a phase of coördination."[4] "A coördination is an organization of means with reference to a comprehensive end."[5] "The stimulus is that phase of the forming coördination which represents the conditions which have to be met in bringing it to a successful issue; the response is that phase of one and the same forming coördination which gives the key to meeting these conditions, which serves as instrument in effecting the successful coördination.... The stimulus is something to be discovered.... It is the motor response which assists in discovering and constituting the stimulus."[6] Substitute "sensation" or "sense data" for "stimulus," "operation" or "action" for "motor response," and what is here quoted will be found occupying a central place in all Professor Dewey 's subsequent expositions of his pragmatic doctrine. Three years later, he wrote: "I conceive that states of consciousness ... have no existence as such before the psychologist gets to work." "Knowing, willing, feeling, name states of consciousness not in themselves, but in terms of results reached, the sorts of value that are brought into experience."[7]

If, then, I am right in the derivation here assigned, Professor Dewey's functional theory of knowledge is the necessary consequence of a methodological principle applied to psychology; namely, that concepts used should designate something concretely identifiable in experience, not abstractions apart from that which serves for their empirical discovery. Sensations, or sense data, are condemned as not thus identifiable apart from the responses to which they lead and the ends such action serves.

The functional theory of the concept has, as I have tried to show elsewhere, other grounds, of a more purely logical sort. Viewed in this way, however, and apart from psychological considerations, it is not, I think, a simple conse-

[3] *Psychological Review*, Vol. 3, pp. 357–370. My attention was drawn to this by its citation in Boring's *History of Experimental Psychology*, pp. 540–541.

[4] *Loc. cit.*, p. 368.

[5] *Loc. cit.*, p. 365.

[6] *Loc cit.*, p. 370.

[7] "Psychology and Philosophic Method," address before the Philosophical Union of the University of California, 1899, pp. 6 and 10. It is interesting to remember that in the preceding year, James presented the first statement of *his* pragmatism, "Philosophical Conceptions and Practical Results," under the same auspices.

quence of the pragmatic test, but has a conceivable alternative, namely, immediatism or the presentation-theory of knowledge. By this logical approach, one has to adduce reasons for repudiating the conception that empirical knowledge – or *some* empirical knowledge – is immediately given, in order to reach the conception that activity and its issue are indispensable and characterizing factors in empirical cognition. The theory that meanings connote action and truth connotes prediction, is implicit in the notion that truth and meanings are something *to be tested*; hence, that they do *not* bring their own warrant in being simply given.

I believe we here arrive at a turning-point in pragmatic theory.[8] On the one side, the pragmatic principle seems to stress the directly empirical. Put enough emphasis on that and one might conceivably – though not validly, I think – arrive at a highly subjectivist theory, of knowledge as immediate. On the other side, it stresses the limitation of meaning to what makes a verifiable difference, and of truth to what can be objectively tested. Follow out the consequences of *that*, and of the functional theory of knowledge which it implies, and I believe one is inevitably led to the doctrine that concepts are abstractions, in which the immediate is precisely that element which must be left out. To this point, I should like to adduce certain illustrations, drawn from contemporary science.

The new physics is, in good part, based upon certain applications of the pragmatic test. And to these physicists the validity of this methodological principle and the functional interpretation of conceptual meanings seem to be simply synonymous. One main premise of physical relativity is, of course, the impossibility of deciding which, of two bodies in relative motion, is at rest with respect to an absolute space. (We may remind ourselves that James's illustration of the pragmatic test – the man and the squirrel – is simply an example of the relativity of motion to frames of reference.) In elaborating the consequences of this relativity of motion, it became necessary to repudiate other absolutes, such as length, time, simultaneity, etc.; and this was done by identifying these with the actual modes by which they can be tested – the pragmatic test once more. The resultant methodology may be generalized in what Bridgman calls "the operational character of concepts." "We evidently know what we mean by a length if we can tell what the length of any and every object is, and for the physicist nothing more is required. To find the length of an object we have to perform certain physical operations. The concept of length is therefore fixed when the operations by which length is measured are fixed: that is, the concept of length involves as much as and

[8] When this was written, Professor Burtt's paper, "Two Basic Issues in the Problem of Meaning and of Truth," contributed to *Essays in Honor of John Dewey*, had not yet come to hand. I note with pleasure that a part of his paper and part of what is here written run parallel.

nothing more than the set of operations by which length is determined. In general we mean by any concept nothing more than a set of operations; *the concept is synonymous with the corresponding set of operations.*"[9]

Why does the physicist thus identify his concepts with operations of testing? Is it because the properties he is concerned with are peculiarly those which are difficult or impossible of immediate apprehension? Not at all. Suppose a critic to observe: "But of course your concept of length goes back to an immediately given somewhat. You test the relation of a particular length to the yardstick, but unless your yardsticks were an immediate so-longness, directly apprehended, your concept of length would be entirely empty." He will reply that this immediate so-longness has nothing to do with physics, because it can not be tested. The *yardstick* can be tested; as it happens, the measurement of it will differ for different relative motions. But any immediate so-longness of it is something which makes no difference to physics: if it had one so-longness to *A* and another for *B*, that would be unverifiable and ineffable. It is the significance of the operational character of concepts to extrude such ineffables from physics. Subjectively it may be that *A* and *B* both seem to themselves at rest in the center of the universe, directly apprehending certain so-longnesses, so-heavinesses, felt endurances of things, and what not. But physical position and motion are simply relations to a frame of reference, physical time a relation to clocks; physical properties in general consist in those operations and relations by which they are assigned and tested. The standards are absolutely standards – that is, arbitrary – but they are not absolute in any other sense. The standard yardstick, or clock, or whatever, has its length or the measure of its seconds, etc., in an entirely similar and verifiable set of relations to other things, and only so. Any immediate content of the concept is extruded by the principle of the pragmatic test. If your hours, as felt, are twice as long as mine, your pounds twice as heavy, that makes no difference, which can be tested, in our assignment of physical properties to things. If it *should* thus make a difference in our predication of properties, we should at once decide that one of us must be mistaken. Such decision would reveal our implicit recognition that our concept of the predicated property excludes this subjective element, and includes only the objectively verifiable relations.

The physical concepts are not, by this extrusion of the immediate, emptied of meaning. Their meaning is, as Bridgman says, in the operations of verification and their results; it is contained in that complex network of relationships which constitute the laws and equations and physical predications of which the science consists. The concept is, thus, merely a sort of configuration or relational pattern. Whatever the immediate and ineffable content which is

[9] *The Logic of Modern Physics*, p. 5; italics are in the text.

caught in that net may be – for John Jones or Mary Doe or anybody – it does not enter into the science of physics. The resultant conception of the content of the science is admirably expressed by Eddington: "We take as building material *relations* and *relata*. The relations unite the relata; the relata are the meeting points of the relations."[10] The conceptual in knowledge is the element of pure structure or operational construction.

Thus the pragmatic test becomes a kind of law of intellectual parsimony, and leads, in science, to what might be called "the flight from the subjective." Physics is by no means an isolated example: the parallel thing has happened, or will happen, in every science, because it is simply the extrusion of what the science can not finally and conclusively test. Mathematics, being the oldest science, did it first. Geometry begins with rope-stretching and ends as the deductive elaboration of purely abstract concepts, the problem of the nature of space being handed over to physics and philosophy. Arithmetic begins with counting empirical things and ends in the logical structure of *Principia Mathematica*, for which the existence of the number 8 (for a certain type) requires an extraneous assumption. Just now mathematics threatens to go further and restrict itself to systems of operations upon marks. Psychology first got rid of the ineffable soul; a pragmatic psychologist then asked, "Does consciousness [as distinct from its content] exist?" and now we have behaviorism, based on the methodological principle of restriction to what is objectively verifiable. If some of these movements go beyond what is necessary or valid, at least they exhibit the tendency, and the ground of it.

Professor Dewey seems to view such abstractionism in science as a sort of defect – sometimes necessary but always regrettable; an inadequacy of it to the fullness of experience. In various ways, it seems to him to threaten the relations between knowledge and life. Professor Eddington's book suggests that a doubt on this point besets him too when, as physical scientist, he finds himself also constrained to assess philosophical significances. That the world as experienced and life as lived are not going to be thrown out of the window goes without saying. Particularly for Professor Dewey, it seems to me that this apprehensiveness is misplaced, because he has himself indicated the main considerations essential for the solution of the problem which results – the problem of the relation of abstract concepts to the concrete and directly empirical. Time does not permit attention to all the pertinent considerations. But I wish to suggest one which is important, by a final illustration, drawn once more from physics.

As an eventual result of subatomic and quantum phenomena, the new physics has abolished imaginable matter. Analysis of the physical emerges finally in something like Schrödinger's ?-functions, in mathematical expressions of probability, concrete representation of which can only be approached

[10] *The Nature of the Physical World*, p. 230.

in terms of an admittedly fictitious sub-ether of variable dimensions. Immediately apprehensible matter dissolves into mathematics. Two other expressions of this same abstractness of the physically ultimate occur in Eddington's later chapters: one is that statement about relations and relata, already referred to; the other is to the effect that physics reduces the concrete object to pointer-readings.[11] The elephant sliding down the grass slope is at once an immense flock of ?-functions getting integrated, and a set of pointer-readings. The two interpretations do not seem interchangeable. Let us fasten on the pointer-readings. Why reduce the elephant to pointer-readings? In the first place, because physics can not deal with the elephant as a whole. It comprehends a good many – perhaps most – of the elephant's properties, but that he is, for example, a wonderful fine fellow and very intelligent, must be omitted from physical consideration. Let us call that organization of properties which physics *can* deal with "the physicist's elephant." Why is the physicist's elephant reduced to pointer-readings? First because, with the apparatus oriented upon the elephant, the elephant *determines* the pointer-readings. Second, because such pointer-readings are a conveniently hybrid sort of reality: the apparatus and pointers being physical, their readings correlate with the properties of the elephant; and the readings being numerical, they translate those properties into mathematical values. The significance of the pointer-readings is merely for the purpose of such translation. The last state of the physicist's elephant, like the last state of the electron, is in mathematical functions. But this last stage for the *physicist* is merely an intermediate stage of operations with respect to the elephant. The numerical values given by the pointer-readings are substituted for the variables in some mathematical equation expressing physical law. They thus determine a numerical value of some other mathematical function. This last can be translated back into something of the order of pointer-readings, and hence back into some other and previously undetermined property of the elephant – with the eventual result, perhaps, that we get the elephant safely into a box-car. Such eventual result is the reason for being of the whole set of operations. If it be asked, then, "Why reduce the elephant to mathematical functions?" the answer is that this is the best way known to man for getting him into the box-car.

The physicist's elephant is an abstraction, but a rather palpable sort of abstraction. All of him that the physicist finally deals with is what is common to the elephant and the pointer-readings; namely, a more abstract, a *very* abstract, configuration of relationships. This structure of relations is what, in general terms, the mathematical equations of physics express.

Thus if the last conceptual stage of the elephant – and of the physical in general – is in mathematics, or a set of relations of relata, it is not necessary to try to follow this transmogrification of the elephant, or of matter, with the

[11] Pp. 251 ff.

imagination. Nor is it appropriate to cry shame upon the physicist for leaving the world of palpable elephants in favor of such unimaginable abstractions. The physicist's concept represents simply an intermediate stage in a process which begins and ends with elephants and such – not with the physicist's elephant even, but the one which slid down the bank and got put in the box-car.

As Professor Dewey points out, the physicist and mathematician simply take this intermediate stage off by itself and deal with it on its own account.[12] Thus if we reflect upon the functional theory of knowledge, I think we may come to the conclusion that there is no implication of it which is incompatible with the notion that concepts in general are abstractions – are even very thin abstractions. Because the function of concepts is not to *photograph* elephants but to get them into box-cars. Concepts represent simply that operational function of cognition by which it transforms the something given, with which it begins, into the something anticipated or something done, with which it ends. That they may have lost, or discarded as irrelevant, those elements of the concrete and immediate which characterize direct perception and imagination, is nothing to the point. Goodness in a concept is not the degree of its verisimilitude to the given, but the degree of its effectiveness as an instrument of control. Perhaps Professor Dewey might even, with entire consistency, find fewer occasions to regret that the relatively undeveloped sciences of human affairs show a tendency to imitate this abstractness. When the social sciences attain that degree of abstractness, and consequent precision, which already characterizes physics and mathematics, perhaps they will have less trouble getting their social elephants into their social box-cars. Economics is the best developed of the social sciences, and a fair illustration.

To conclude: the fact that the pragmatic test seems, on the one hand, to demand that all meaning be found eventually in the empirical, and on the other, seems to induce a flight from the immediate and directly apprehensible into abstractions, is not, in reality, any contradiction or any difficulty. In one sense – that of connotation – a concept strictly comprises nothing but an abstract configuration of relations. In another sense – its denotation or empirical application – this meaning is vested in a process which characteristically begins with something given and ends with something done – in the operation which translates a presented datum into an instrument of prediction and control.

[12] See *The Quest for Certainty*, pp. 156 ff.

LOGIC AND PRAGMATISM

C. I. Lewis. "Logic and Pragmatism." *Contemporary American Philosophy: Personal Statements*, ed. George P. Adams and William P. Montague (New York: Macmillan, 1930), pp. 31–51.

The most powerful single influence in my intellectual development was an old lady whom I met when I was fifteen. A year or two earlier I had begun a period of the most intense and furious thinking I shall ever experience. The combination of native scepticism and an orthodox upbringing had proved to be an explosive mixture: I had been plunged into doubts and questions which went on and on until I faced the universe with something of the wonder of the first man. The old lady, with compassionate understanding, confessed that she too was a heretic, and after establishing our agreements we went on to the much more enticing matter of our disagreements. Our discussions continued, at intervals, over a period of about two years, at the end of which time I had worked out my own answers to the puzzles which beset me. Some of these, I am sure, must have startled and amused my mentor, but she always agreed solemnly to consider them.

As yet no book on philosophy had even fallen under my eye; but about this time someone must have said the right word, because I remember reading a short history of Greek philosophy (Marshall's, I think), and then, following the references, looking into Ueberweg and the Zeller books. My chagrin was enormous. Much of my philosophy had been anticipated by two gentlemen named Heraclitus and Anaxagoras, and the rest could be fairly duplicated by a judicious eclecticism amongst the other pre-Socratics. It was my first professional disappointment, and quite the most grievous. I read Spencer's *First Principles* also, and found there much of stimulus and much which broadened my horizons – so much, in fact, that I cannot now recall any sense of bewilderment or failure to understand. Very likely I did not comprehend enough of it even to be properly puzzled.

Nothing comparable in importance happened after that until I became acquainted with Kant. I was now safely under academic auspices, and thinking was no longer a lone adventure. Kant compelled me. He had, so I felt, followed scepticism to its inevitable last stage, and laid his foundations where they could not be disturbed. I was then, and have continued to be, impatient of those who seem not to face the skeptical doubt seriously. Kant attracted me also by his intellectual integrity and by the massiveness and artic-

ulation of his structure. The evidence of Kant in my thinking ever since is unmistakable, however little I may achieve the excellences which aroused my youthful admiration.

Of my teachers at Harvard, Royce impressed me most. His ponderous cogency kept my steady attention, even though I never followed to his metaphysical conclusions. James, I thought, had a swift way of being right, but how he reached his conclusions was his own secret. Royce was, in fact, my paradigm of a philosopher, and I was prone to minimize the difference from him of such convictions as I had. It was Royce himself, finally, with my doctor's thesis before him, who pointed out the extent of these differences. He concluded by saying, with his usual dry humor, "I thought you were principally influenced by Perry, but I find he thinks you are principally influenced by me. Between us, we agreed that perhaps this is original."

Royce was also responsible for my interest in logic, or at least for the direction which it took. In 1910–11 I was his assistant in two courses in that subject and he put into my hands one of the first copies of *Principia Mathematica*, Volume I, which came to Cambridge. It is difficult now to appreciate what a novelty this work then was to all of us. Its logistic method was so decidedly an advance upon Schröder and Peano. The principles of mathematics were here deduced from definitions alone, without other assumptions than those of logic. I spent the better part of a year upon it.

However, I was troubled from the first by the presence in the logic of *Principia* of the theorems peculiar to material implication, such as "A false proposition implies any proposition," and "A true proposition is implied by any." The theorems themselves, of course, were familiar; they went back to Peirce and Schröder. But in spite of Peirce's remarks on the topic, I had never taken them seriously, because of their obvious historical origin.

The investigations to which I was moved by this relatively small matter grew in scope and occupied such leisure as I had for the next six years. Moreover, my thinking on other philosophic topics has been much influenced by these researches, so that I must present, as briefly as possible, the gist of this problem.

Those logicians who were earliest interested in an exact calculus of logic had, all of them, turned first to the relations of concepts or classes. This necessitates a choice – as may be discovered by their mistakes – between the logic of intension and the logic of extension. The relations of class-names in intension are meagre in certain ways, and hardly afford a calculus. Boole founded the algebra of logic, where Leibniz and his Continental successors had failed, principally because Boole interpreted logical relations exclusively in extension. This is no particular merit of Boole's; it seems, rather, to result from the fact that he was born in Great Britain, and knew nothing about his Continental predecessors. British logicians, when really original, have always thought in terms of extension; Continental ones in terms of intension. (Some

psychologist with an eye for history ought to investigate this.) So Boole took the universal proposition, "All *a* is *b*," to mean, "The class of things *a* is included in the class *b*," instead of "The concept *a* includes or implies the concept *b*," as a Continental would have done. This extensional point of view requires the special case that if there are no members of the class *a*, then "All *a* is *b*" will hold, regardless of the connotations of *a* and *b*. If Boole had any misgivings about this paradox, the arithmetical analogies which he followed in constructing his algebra would have compelled it in any case. The null-class is contained in every class just as $0 < x$, for any positive number x. The converse principle, that any class is contained in the class of "everything," is obvious.

The effect of these limiting cases is to restrict the interpretation of the algebra as a logic of class-terms to the relations of extension. If there are no centaurs, then all the centaurs there are will be Greeks; this is true regardless of the connotation or intension of "centaur" and "Greek." It does not follow that if there *were* any centaurs they *would be* Greeks.

Now Boole discovered a second application of his algebra to propositions (more correctly, to propositional functions). For this, he let the symbols *a*, *b*, *c*,... represent the times when the propositions *A*, *B*, *C*, are true. Here the analogue of "All *a* is *b*" is, "Whenever *A* is true, *B* is true," or "*A* implies *B*." If the algebra is to have this second application, the properties of implication must be point for point analogous to those of classes in extension. Hence if $A = 0$ – that is, if *A* is always false – then *A* must imply any proposition *B* whatever. And if *B* is always true – that is, if $B = 1$ – then *B* must be implied by every proposition. Boole's principal successors, Peirce and Schröder, observed that a proposition, as distinguished from a propositional function, if once true is always true. Hence as applied to propositions, $A = 0$ may be interpreted simply as "*A* is false," and $B = 1$ as "*B* is true."

Thus the application of the algebra to propositions requires these two principles, "A false proposition implies anything" and "A true proposition is implied by any." In the sense of "implies," which figures in the algebra, "*A* implies *B*" will hold if *A* is false or if *B* is true, and will fail only when *A* is true and *B* is false.

As the analogy with classes shows, this is the case only because the algebra must be restricted to relations of extension. The relation here designated by "implies" is such that a false proposition implies anything, but that throws no light on what it *would* imply if it *were true*.

A meaning of "implies" which is such that the implications of a proposition depend upon its truth or falsity is certainly not the usual one. And the peculiar properties of it are neither important logical discoveries nor absurdities; they are merely the inevitable consequences of a novel denotation for an old and familiar word, long used in common parlance in a different meaning. Thus the calculus of propositions which is historically continuous with Boole is not

a calculus of implications, such as those with which logic and deduction generally have always been concerned. This new meaning of "implies" (now called "material implication") should be submitted to some examination before its laws are accepted as a canon of deduction. Such examination was lacking in *Principia*.

Two sorts of problems were before me. First and most obviously: Is there an exact logic, comparable to this extensional calculus, which will exhibit the analogous relations in intension? And is the intensional analogue of material implication the relation upon which deductive inference is usually founded? Second, there were larger and vaguer questions: Could there be different exact logics? If I should find my calculus of intension, it and material implication would be incompatible, on some points, when applied to inference. In that case, in what sense would there be a question of validity or truth to be determined between them? And what criteria could determine the validity of logic, since logic itself provides the criteria of validity used elsewhere, and the application of these to logic itself would be *petitio principii*?

Even the two questions of the first sort could not really be determined in separation from these more general problems. Yet I chose to begin with them. It seemed more promising to argue from exactly determined facts of the behavior of symbolic systems to conclusions on more general problems than to attempt to reverse this procedure. Logicians who argue from "first principles" to the validity or invalidity of logistic developments find themselves in a weak position, since they dogmatize about a matter which they either have not investigated or have approached with an initial prejudice which commits the *petitio principii* just pointed out.

Leaving, then, the larger questions, I turned to the logistic development of the logic of intension. The results of this investigation may be briefly summarized, since it has been outlined in Chapter V of the *Survey of Symbolic Logic*.[1]

The intensional implication relation (or "strict implication" as I called it) gives rise to a calculus as exact as the older logistic systems. It is also more

[1] A note should be added concerning the mistaken postulate which I there assumed for the system of strict implication. This was later pointed out by Dr. E. L. Post, and corrected by me in a note in the *Journal of Philosophy*. [Strict Implication – an Emendation." Vol. XVII (1920), No. II, pp. 300–302.] In developing the system, I had worked for a month to avoid this principle, which later turned out to be false. Then, finding no reason to think it false, I sacrificed economy and put it in. It was because it thus entered the system so late in its development that I was able, when the mistake was discovered, to correct it in brief space. The system of strict implication, as printed, contained no postulate logistically incompatible with a material interpretation, such as $?p\colon -p\ .\ -(p < -p)$. To include this would have required a fundamental complication, undesirable in a book addressed to beginning students. I am lately in receipt of a proof, made by a Polish student, M. Wajsberg, that the principle $p < .\ q < p$ is independent of the amended postulates. This covers the same point.

inclusive: when the extensional relations are introduced by definition, it includes the calculus of propositions, as previously developed, as a subsystem. While there are ambiguities about the usual meaning of "implies," and the final issues are such as have seldom been faced at all, on the whole accepted deductive procedures and ordinary logical intuitions accord with strict implication and do not accord with material implication where it diverges.

The only implication relation upon which inference is likely to be based is this intensional or strict implication, for reasons which are fairly obvious. "The proposition *A* materially implies the proposition *B*" means precisely, "It is not the case that *A* is true and *B* false." This is necessary to ordinary deduction, since otherwise false conclusions could be derived from true premises, but it is not sufficient. To see this, let us inquire how this relation might be verified as holding. In a particular case, it could be verified simply by finding *A* to be false; but that would mean finding our premise false, so that the conclusion *B* would ordinarily not be drawn. Sometimes, however, we are interested to draw the inferences from false assumptions. But we should not do this on the basis of material implication, precisely because a false premise materially implies anything and everything. That *A* materially implies *B, because A is false*, throws no light on the question what *A would* imply if it *were true*.

We might also verify "*A* materially implies *B*" in a concrete instance by finding *B* to be true. But this would mean finding our conclusion to be true. Most frequently in such cases we should not "make the inference" because it would be superfluous. Sometimes, however, we are interested to discover what implies some known fact and what does not – for example, in the testing of hypotheses. But a known fact is *materially* implied by *any* hypothesis. Amongst known facts, the material implications of all hypotheses whatever are identical.

Consequently no use can be made of material implication in drawing valid inferences, except in those cases in which the implication can be known to hold for some other reason than that the premise is false or that the conclusion is true. When we inquire how we can know that it is not the case that *A* is true and *B* false, without knowing that *A* is false and without knowing that *B* is true, the only answer is: By knowing that if *A were* true, *B must be* true; by knowing that the truth of *A* is inconsistent with the falsity of *B*; by knowing that the situation in which *A* should be true and *B* false is an impossible situation. That is to say, the only case in which any inference could be based on a material implication is precisely the case in which it should coincide (and *be known* to coincide) with the intensional or strict implication of *B* by *A*. This amounts to saying that the real basis of the inference is the strict implication. "*A* strictly implies *B*" mean exactly "The truth of *A* is inconsistent with the falsity of *B*."

The so-called "formal implication," "For every x, ?x materially implies ?x," would coincide, in its general deductive significance, with strict implication provided "For every x" be interpreted to mean "For every possible or conceivable x." It will be obvious that "For every conceivable x, it is not the case that ?x is true and ?x false," is a strict implication, differently phrased. But if "For every x" means "For every x that *exists*," then this formal implication represents the ordinary relation of classes, "Every existent thing having the property ?, has also the property ?." In *Principia* it is this second interpretation of formal implication which is chosen.

Various technical problems which came to light in the course of these investigations may be omitted here as probably of small interest to the general reader. However, there is one such matter which must be mentioned because it influenced the direction of my thinking outside the field of exact logic. Early in the course of these researches I formed the conviction that all valid inference, being a matter of intension, rests upon the analysis of meaning. The reasons for this will probably be evident from the foregoing. But the symbolic relations I was dealing with proved to have properties which I had not anticipated, and some of these gave me pause. In particular, while it would not be true, in the system of strict implication, that a merely false proposition implied anything and everything and a merely true proposition is implied by any, it *would* hold that a "necessary" proposition (defined as one which is implied by its own denial) is implied by any, and that a self-contradictory proposition (one which implies its own denial) implies anything.

Had I made a mistake in my assumptions so that the system was out of accord with the properties of analytic inference? Or did the implication relation of ordinary inference have these properties? The latter proved to be the true alternative. There was no way to avoid the principles stated by these unexpected theorems without giving up so many generally accepted laws as to leave it dubious that we could have any formal logic at all.

There were many corroborations. The simplest to set down is as follows: Suppose that a proposition A (say, "Today is Monday") implies another, B ("Tomorrow is Tuesday"). Then the premise A, together with any additional proposition, C (say, "Mars is not inhabited"), will likewise imply B – that is, "Today is Monday, and Mars is not inhabited" implies "Tomorrow is Tuesday." According to another general principle, if two premises give a conclusion, but that conclusion is false while one of the premises is true, the other premise must be false. "All men are mortal" and "Socrates is a man" together imply "Socrates is mortal." Hence if all men are mortal, but Socrates is not mortal, then it follows that Socrates is not a man – that is, we have the rule: If "A and C" implies B, then "A but not B" implies "not C." Applying this rule to our first example, we have: "Today is Monday and Mars is not inhabited" implies "Tomorrow is Tuesday"; hence "Today is Monday, but tomorrow is not Tuesday" implies "Mars is inhabited." In this illustration,

the last-mentioned proposition might have been anything you please without altering anything else. Thus ordinary logical conceptions require that the affirmation of a premise, together with the denial of its consequence (a case of contradiction), will imply anything and everything.

If, then, I had made no mistake, the line of division which marks off that class of propositions which are capable of corroboration by logic alone (necessary propositions) from merely empirical truths, and marks off the impossible or absurd, which can be refuted by logic alone, from merely empirical falsehood, is a division of major importance. Possible and impossible, contingent and necessary, consistent and inconsistent – such categories of intension are independent of material truth, and their distinct nature is founded in logic itself. Moreover, as is easily obvious, all the propositions of logic are truths of intension, and therefore certifiable without reference to the merely factual or empirical.

But I had further doubts. In particular it was not clear that if one should, by inadvertence, set out with incompatible assumptions, there would be no conclusion whatever which one might not draw from them by analytic inference. Nor was it clear that all necessary propositions are analytically derivable from any assumption you please. The facts of the symbolic system were inescapable, and ordinary practice corroborated them; but what did these facts mean?

In part, the answer was a simple one which should have been anticipated. These unexpected properties of implication did not mean that all necessary propositions are analytically derivable from any arbitrarily chosen assumptions whatever; they did represent the fact that implication is not a property of isolated propositions as such, but of systems. Necessary truths are all of them principles of logic, or such as can be certified on grounds of logic alone. Without logic, nothing is derivable from anything; the logic of it is implicit in every deductive system. All necessary propositions are thus, explicitly or tacitly, present in every system, and indeed in every assertion conceived as having logical consequences. Inference is analytic of the system rather than of its separate and bare constituents. If there is any exact logic which is capable of representing inference as analytic in any other sense, I have never been able to discover a clue to it. I should but be dumbfounded to learn of such tomorrow, but I have followed every lead that has occurred to me, always with negative results.

If inference is analytic of systems, not of propositions in isolation, does this mean that logic compels the acceptance of a coherence theory of truth or the acceptance of that kind of unity of the world which is maintained by logicians of the "modern" or Hegelian school? I turned briefly to the consideration of this possibility – though, I must admit, without any conviction of the necessity of so doing – because while it had become apparent to me that logic required the existence of necessary propositions, it was not so apparent that it required

the existence of any truth which is *not* necessary. That the distinction of necessary and contingent must finally fail and all truth reveal itself as necessary, because inference depends on systematic unity, is just what the modern logicians claim. The conclusions which I reached are outlined in a little paper, "Facts, Systems, and the Unity of the World." The thesis that all truths are necessary, and none independent of any other, is hopelessly implausible in the light of certain facts of mathematical systems concerning which nobody (unless it be the modern logicians themselves) has ever entertained a doubt. The whole development of modern geometry, for example, must be somehow invalid if they are right.

The most general and important issue was still before me. I had set out to determine a question of truth between two symbolic systems – material implication and a logic of intensional implication. This had raised the further question what kind of an issue of truth there could be in such a case, and what criteria could determine it. I had found, in commonly accepted practices and principles, corroboration of the characterizing features of strict implication – the distinction of necessary from contingent truth, the classification of logical principles themselves as necessary, and, as a consequence, the status of logic as self-affirming or self-critical, its principles being implied by their own denial. Could such necessity or self-affirmation be accepted as a final criterion of truth in logic?

There was unmistakable evidence that such was not the case. In the first place, both material implication and strict implication had this character, yet both could not be accepted as stating the truth about what can validly be inferred from what – the truth of logic. Also I found that other and somewhat similar systems could be devised, each of which would have the same general kind of mathematical precision and methodological integrity. These might be called "pseudo-logics" or "metalogics." Though I made no systematic investigation, it became evident that the number of such would be limited only by some criterion of "logistic system" or of the principles of derivation which should be allowed. Such a criterion would itself be an antecedent principle limiting "logical" truth. That such a system might be totally unacceptable as a "true logic" and yet be entirely consistent, and even self-affirming, in its own terms is due to the curious involution which is peculiar and inevitable to logical truth. "Consistency" is the absence of an "implication": two propositions are consistent when neither implies the negation of the other. Hence if the meaning of "implies" – and consequently the methods of derivation – be allowed to vary, a "queer" logic may be "consistent" or "self-critical" in its own "queer" way.

Thus we revert to the previous question, which now assumes a somewhat complicated form. If formal logic is capable of any exact development at all, then we are confronted with the task of deciding which, amongst various possible and actual logistic systems, is such that its principles state the truth

about valid inference. Internal consistency and "self-criticism" are not sufficient criteria to determine a truth which is independent of initial assumptions which are they logical in nature. Thus logic cannot test itself – or rather, such test does not prove truth in logic.

It was clear that such a problem has no solution in logic; I was carried beyond logic into the field of epistemology. Many other strands, not mentioned here, were, of course, already woven into my thinking. In particular it had been impressed upon me that it is possible to take symbolic procedures both too seriously and too lightly. To paraphrase Hobbes: Symbols are our counters; they are the money of fools. But on the other hand, the behavior of symbolic systems is nothing more or less than the behavior of the human mind, using its most characteristic instrument: there is nothing in them which we have not put in ourselves, but they teach us inexorably what our commitments mean.

Also, at just this time it became my duty and privilege to turn over the numerous unpublished papers of Charles Peirce. Though I was not especially conscious of it, this was perhaps the means of stirring up old thoughts of the time when I had listened to James, and reminding me also of what Royce used to call his "absolute pragmatism." Again, I had long been attracted to certain theses of Dewey's logic – if only he would not miscall "logic" what is rightly a much wider thing, the analysis of the constructive thought-process! The study of exact logic itself had revealed unmistakably that in every process of reasoning there must be an extra-logical element. This cannot but be so, since from any premise or set of premises whatever an infinite number of valid inferences can be drawn. (This is an immediate consequence of Poretsky's laws.) What is called "*the* conclusion" must be selected from this infinity by psychological obviousness or by some purpose or interest; certainly logic does not dictate it. The *direction* of thought inevitably belongs, then, to such an extra-logical factor. Finally, Peirce's "conceptual pragmatism," turning as it does upon the instrumental and empirical significance of concepts rather than upon any non-absolute character of truth, was at some points consonant with my own reflections where James and Dewey were not.

Whatever it was that turned my thoughts in this direction, at any rate I began to see that the principles of logic will answer to criteria of the general sort which may be termed pragmatic, and that where empirical verification is not in point, and logical "necessity" itself is not sufficient, no other kind of criterion can in any sense be final.

It had become apparent from my little experiments with strange "logics" that two minds which followed different systems in their modes of inference need not be unintelligible to one another – that, in fact, they might be so related that when their premises were common neither (outside of logic itself) would ever reach a conclusion which the other must repudiate as false. But, as between two such, the road from premise to conclusion would be more or

less direct, more or less impeded. Fundamental psychological bent might here dictate a choice. Or again, if the general course of experience were other than it is – if, for example, all processes in nature should be reversible – then, although no different choice of modes of inference would be dictated, a different "logic" would apply with more facility. Thus the ultimate ground of accepted logical principles, as against other self-consistent modes, might be criteria of convenience (a poor word, but the best I can think of), somewhat like those which Poincaré suggested as determining our choice of Euclidean geometry.

This thesis, by itself, seems implausible and highly paradoxical: the stronghold of pragmatism supposedly lies in the empirical; logic is the citadel of rationalism. Nevertheless I became more and more convinced that this was right. Pragmatism, as ordinarily understood, seems to take things wrong end on; it is the element which mind contributes, in truth and knowledge, which may be pragmatic; the empirical brute fact of the given is absolute datum. Logic contains no material truth; it is independent of the given precisely because it dictates nothing whatever with regard to the content of experience, but determines only the mind's mode of dealing with it. This thought suggested others, which soon came to keep it company and mitigate the paradoxical air which it exhibited in isolation.

A variety of other problems, mainly in the theory of knowledge, had been in my mind for the past few years. Some of them were closely related to those already suggested as growing out of logic. I now sat down (this was in 1921) to the first draft of something concerning these, which I projected as "Studies in Logic and Epistemology." These will never see the light. They grew from one box to two, and then to several. But the yeast of the newly awakened pragmatic conceptions was working too strongly. My thought changed and widened as I attempted to formulate it, and the result, instead of moving toward some unity of subject and literary coherence, spread in widening circles through the whole field of philosophy. It was a most satisfactory period to me personally, because in the course of it I squared my account with many problems and brought them into touch with one another. What I shall venture to call "conceptualistic pragmatism" proved to be, for me, the key that opened many doors. But my notes I put away, except for a relatively small portion, and concentrated upon certain closely related topics which I found myself particularly interested to develop further. The attempt to outline some of these is the remaining task of this paper.

Logic, and that which is certifiable on logical grounds alone, constitutes the *a priori* element in knowledge. The Kantian cross-classification, by which *synthetic* judgments *a priori* become the foundations of science, has more and more clearly been proved to be without foundation, as mathematics and exact science have developed. Mathematics has been shown to be capable of purely logical development, by analysis alone, and without

recourse to any synthetic element, such as geometric constructions, which represent an appeal from pure conception to intuition. *Principia Mathematica* represents the final stage of the movement in this direction: we see here the deductive development of mathematics merely from the logical analysis (definition) of the mathematical concepts. There is and must be a synthetic element in judgment about the *applications* of mathematics, about real space, or about concrete collections of things. At the same time that mathematics becomes purely logical and analytic, it becomes abstract. Which of the various abstract geometries applies to space becomes a separate and extra-mathematical question, and, as Poincaré and relativity have shown, one which is to be determined either upon empirical grounds – in which case the answer is probable only – or by some pragmatic choice, or by some interplay between these two.

Hume was right in his somewhat wavering conviction that the truths of mathematics represent necessary connections of ideas, and likewise right that this by itself does not prove any necessary connection of matters of fact. The line between the *a priori* and the *a posteriori* coincides with the division between conceptual and empirical; and it likewise coincides with the distinction between what mind itself contributes or determines and what is given as datum of sense.

A priori truth is independent of experience because it is purely analytic of our conceptual meanings, and dictates nothing to the given. Logic, mathematics, and in general whatever has structure and order and system may be developed in abstraction from all consideration of the empirical by purely logical analysis. It depends upon nothing but its own conceptual integrity for that kind of truth which is possible to abstract systems.

Such *a priori* truth is not assertive of material fact, but definitive. This is the clue to many problems. In the first place, it exhibits clearly the sense in which we can make stipulations applicable to experience but independent of its content. In the absence of definitive criteria, experience would be unintelligible; these are prerequisite to truth and knowledge, though not to mere givenness. The definitive principle is "necessary" truth: it cannot be false; it is prerequisite to intelligibility; it must be taken in advance of the particular experience; it dictates nothing as to the content of the experience.

In the second place, this solves the problem of the criterion between what mind contributes in truth and knowledge and what is independent of the mind. How should we know what mind does, if mind could do no different? I discover what I do solely by the difference in what ensues when I refuse to do, or do differently. If there should be immutable and "un-get-over-able" modes of intuition or of thought, the mind could never discover that these belonged to itself and were not characters of the independent real; they would be absolute data, flatly given in experience, and the individual would find them as he finds his ears.

There must, then, in some sense or other, be conceivable alternatives to what is *a priori.* In those modes of our own intellectual activity which are exhibited in the criteria supplied by definitive principles, there are such alternatives. A definition may be laid down in one or another way; we classify and order and understand as we ourselves determine. Once our exact concepts are taken, the unfolding of them is an absolute truth: there is no alternative about that (unless we ascend to some higher choice of alternative modes of deductive order itself). But what concepts we shall formulate, and what we shall apply, admits of choice. The mind approaches the chaos of experience with its own intellectual instruments, which are independent of the given as the given is of them. Truth and knowledge represent the meeting of these two. That the particular truth and knowledge may reflect, in some part, a choice of such instruments, that the net of understanding may be stretched across the given in terms of one or another reference system of conceptual order, is a matter which might well be illustrated at some length, but will probably be evident without such exemplification. And the sense in which the truths of experience will be, on one side, determined by the presence of such definitive conceptual order, though the content of the given is not thus determined, will likewise be clear. The whole trend of exact science serves strongly to enforce the fact of this presence, throughout all knowledge, of an *a priori* element which enters through the simple fact that experience never supplies its own conceptual interpretation, but that conceptual systems, amongst which there may be possible choice, serve as criteria of such interpretation, without imposing any limit on the empirical content. That in the presence of such alternative systems of order, pragmatic criteria, which may reflect on the one side human bent and interest, and on the other a facility determined by the general character of what is presented, will have their place in fixing the truths of experience, needs no special demonstration.

If, however, all truth which can be certain in advance of the experience to which it applies is of this purely analytic and definitive sort, then we might be led to remark that such abstract *a priori* truth tells us nothing of the nature of reality beyond our own minds, and is significant only of our own consistency of thought. This conclusion would be a mistaken one; paradoxical as it may sound, we can predict the nature of reality without prescribing the character of future experience. What the mind meets in experience is not independent *reality*, but an independent *given*; the given is not, without further ado, the real, but contains all the content of dream, illusion, and deceitful appearance.

In fact, the criteria of reality represent a peculiarly illuminating example of the *a priori.* The word "real" has a meaning, and represents a definite conception which, when applied to the content of experience, leads to the interpretation of this content sometimes as "real," sometimes as "unreal." The formulation of the criteria of the real constitutes a merely analytic or defin-

itive statement, representing our interpretative attitude. Such criteria of reality can neither be supplied by experience (since direct generalization from an unsorted experience, not already classified as real, would not serve) nor can experience invalidate them. Whatever in experience does not conform to the criteria of reality is automatically thrown out of court.

We can and must prescribe the nature of reality. We cannot prescribe the nature of the given. The paradox of this is mitigated somewhat when we observe that the word "real" is systematically ambiguous. "Reality" is of different sorts, physical, mental, mathematical – the easily named categories do not cover the easily recognized distinctions. A mirror-image, for example, is its own particular kind of reality, neither "physical" nor "mental," as is also a mirage and "appearances" in general. Each category of reality has its own peculiar criteria, and what is unreal in one sense will be real in some other. *Any* content of given experience will be real in some category or other – will be that kind of reality which is ascribed to it when it is "correctly understood." The categories are neither a Procrustean bed into which experience is thrust nor concepts whose applicability depends on some pre-established harmony between the given and the mind. Rather they are like the reference system which the mathematician stretches through all space and with respect to which whatever positions and motions are there to be described will inevitably be describable. Categorical criteria are neither insignificant and verbal tautologies nor empirical prophecies but exhibit definitive criteria of intelligent classification and interpretation.

The content of a properly conceived metaphysics is the analytic truths which exhibit the fundamental criteria and major classifications of the real; it is definitive of "real"-ity, not descriptive of the universe *in extenso*. In fact, all philosophy has for its task such analytic depiction of the *a priori* – to define the good, the right, the true, the valid, and the real.

It will be evident that the absoluteness of such *a priori* principles, whenever and wherever they are held, is entirely compatible with their historical alteration, just as modes of classification or alternative reference systems, expressible in definitive principles or initial prescriptions, would be absolute while adhered to, but might be subject to considerations of usefulness and to historical change. The assurance of perpetuity for our categories is no greater than the assurance that our basic human nature and the broad outlines of experience will never alter. There is an eternal truth about our abstract concepts – the given is absolute datum; but the chosen conceptual systems applied to the interpretation of the given are subject to possible change. In the field of metaphysical concepts particularly, such change would seem to be a fact – as the history of such concepts as "matter," "mind," and "cause" bears witness.

The categories differ in no wise from concepts in general except in degree of comprehensiveness and fundamental character. Every concept whatever

exhibits criteria of its own little kind of reality. In so far as experience is intelligible and expressible only when grasped in some framework of conceptual interpretation, this *a priori* element of the definitive is all-pervasive.

It is the conceptual order of experience alone which is communicable or expressible. The given, apart from such conceptual interpretation, is ineffable. If, so to speak, one sensory quality could be lifted out of the network of relations in which it stands and replaced by another, the esthetic character of experience might be altered, but everything which has to do with knowledge and with action would remain precisely as before. Community of thought and knowledge requires community of concept or of relational pattern, but if there should be idiosyncrasies of sense which do not affect discrimination and relation, these would be immaterial to our common understanding and cooperation. In fact, in the face of all those *verifiable* differences of sense which are evidenced by our different powers of discrimination, we possess a common understanding and a common reality through the social achievement of common categories and concepts. When the vast and impressive institution of human education – in its wider sense – is remarked, the assumption that such community is simply native or ready-made is seen to be superfluous. My world is my intellectual achievement; our common world, a social one. The frequent objection of the sceptic, that knowledge is implausible in view of the subjectivity of sense, is an *ignoratio elenchi.*

Knowledge grasps conceptual structure or order alone. It was Berkeley who, almost without noting it himself, first phrased this nature of our knowledge. One idea is "sign of" another in the order of nature. If it be a reliable sign – that is, if it bear constant and orderly relationships – one empirical *quale* is as good as another to serve this function of cognition. Knowledge of the external world consists of relations between one item of experience and another, not in the content of experience somehow matching the quality of an external real. Such qualitative coincidence of idea and object – if the notion means anything – would be extraneous to knowledge. This conclusion is quite independent of idealism.

There are not two kinds of knowledge – one of principles or relations, expressible in propositions, and another which we have by mere presentation of the object. The conceptual interpretation of the given is the implicit prediction of other possible experience. As Mr. Whitehead has pointed out, no object can be known without reference to some temporal spread. My knowledge of the object is not the mere having of this presentation, but the implicit prediction of the eventuation of other experience continuous with this. What is thus predicted is not at the moment verified, but it must be verifiable if the interpretative concept is veridically applicable. The mere naming of this thing I see as "desk" predicts eventualities of a specific sort, which, if they should fail to be realized, would lead to the repudiation of the concept "desk" (or perhaps even of "physical reality") as inapplicable to this which

I see. The knowledge of any object transcends its given presentation and grasps a structure of experience. Without order, there can be no *thing*, no experience of *reality*. This, in brief, is the deduction of the categories.

That *if* this be a desk it *will be* thus and so, is an analytic consequence of the concept "desk," not subject to any falsification by experience. That any given "this" is really a desk is theoretically not completely certain. Thus there is an *a priori* element which is all-pervasive in knowledge and prescriptive of reality. Yet all empirical truth, without exception, is probable only.

One further note I should like to make in closing. As the word "knowledge" has been used above, it is narrowed somewhat from its usual meaning. It comprises what have sometimes been called the "truths of description" which, as it is here conceived, depend exclusively upon conceptual order. It excludes "truths of appreciation," the esthetic quality of the given, and all that depends upon sympathy and upon that communion of minds which requires coincidence of immediate experience. Evaluation can hardly be indifferent to the quality of the given. Nor can the basis of ethics be laid without reference to the felt character of experience in another mind. And the religious sense, if it is to take reality as the matrix of human values, will likewise transcend the interests of knowledge in this restricted sense. There is, then, a line of division between such interests and cognition of the type of science. And it is suggested that the foundation of these, not being found in knowledge alone, may rest upon some postulate.

EXPERIENCE AND MEANING

C. I. Lewis. "Experience and Meaning." *Philosophical Review* 43.2 (March 1934): 125–146.

The presidential address to the eastern division of the American Philosophical Association at Amherst College, December 29, 1933.

Ever since the provisional skepticism of Descartes' First Meditation the attack upon any problem of reality has always been shadowed by the question "How do you know?" The extent to which this perennial challenge has determined the course of modern philosophy requires no exposition. That on the whole the results of it have been salutary will hardly be denied; though it may be said – and has been said – that it leads, on occasion, to the confusion of methodological considerations with positive conclusions. The last thirty-five years have witnessed a growing emphasis upon another such challenge, which bids fair to prove equally potent in its directing influence. This is the question "What do you mean?" asked with intent to require an answer in terms of experience. That is, it is demanded that any concept put forward or any proposition asserted shall have a definite denotation; that it shall be intelligible not only verbally and logically but in the further sense that one can specify those empirical items which would determine the applicability of the concept or constitute the verification of the proposition. Whatever cannot satisfy this demand is to be regarded as meaningless.

For any sufficient consideration of this empirical-meaning requirement it would be essential to sketch those developments which have brought it to the fore: pragmatism and the "pragmatic test"; neo-realism, both of the American school and the similar view of Russell; the new methodology in physics which came in with relativity, especially Einstein's treatment of definition and Bridgman's operational theory of the concept; Whitehead's method of "extensive abstraction," by which certain previously refractory concepts can now be defined in terms of the actually observable and their empirical content thus made evident. Last and most particularly, one would mention the logical positivism of the Vienna Circle, whose program is based throughout upon this consideration of empirical meaning. It would likewise be desirable to consider the divergences between these different movements of thought in their interpretation of the general requirement of empirical meaning.

But before this audience it will be unnecessary to attempt any such survey, either of this development in current theory or of the points of divergence with respect to it. Taking these matters for granted, the purpose of what follows will be to explore a little certain questions concerning the limitations imposed upon significant philosophic discussion by this requirement of empirical meaning; in particular certain issues which are likely to divide those who approach these problems with the thought of James and Peirce and Dewey in mind from the logical positivists. The ultimate objective of such discussion would be to assess the bearing of this limitation to what has empirical meaning upon ethics and the philosophy of values, and upon those metaphysical problems which concern the relation between values and reality. But that objective cannot be reached in the present paper, which will be concerned with prior questions. Even these cannot be set forth with any thoroughness; and I hope it will be understood that the purpose of this discussion is to locate issues rather than to dispose of them, and that criticisms ventured are not put forward in the spirit of debate.

The Vienna positivists repudiate all problems of traditional metaphysics, including the issue about the external world supposed to divide idealists from realists, and any question concerning the metaphysical character of other selves. In the authoritative statement of their position we find the following: "If anyone assert 'There is a God', 'The ground of the world is the Unconscious', 'There is an entelechy as the directing principle in the living', we do not say to him 'What you assert is false' but instead we ask him 'What do you mean by your statement?'. And it then appears that there is a sharp line of division between two kinds of propositions. To the one belong statements such as those made in the empirical sciences: their meaning can be determined by logical analysis; more specifically, it can be determined by reduction to statements of the simplest sort about the empirically given. The other class of propositions, to which those mentioned above belong, betray themselves as completely empty of meaning, if one take them in the fashion which the metaphysician intends.... The metaphysician and the theologian, misunderstanding themselves, suppose that their theses assert something, represent matters of fact. Analysis shows, however, that these propositions assert nothing, but only express a sort of feeling of life."[1] According to Carnap all value-theory and normative science are likewise without meaning, in the theoretical or empirical sense of that word.[2]

[1] *Wissenschaftliche Weltauffassung des Wiener Kreises* (1929) 16. (I have translated somewhat freely.)

[2] "Auf dem Gebiet der Metaphysik (einschliesslich aller Wertphilosophie und Normwissenschaft) führt die logische Analyse zu dem negativen Ergebnis, dass die vorgeblichen Sätze dieses Gebietes gänzlich sinnlos sind." "Uberwindung der Metaphysik durch logische Analyse der Sprache," *Erkenntnis* II (1931) 220.

The expression of such feeling of life, and of our evaluative reactions, is, of course, admitted to be a legitimate and worth-while activity; but, as such expression, metaphysical theses are to be classed with art and poetry. Obviously there is room in such a theory for descriptive ethics, on a psychological or sociological basis, and for the determination of values by reference to a norm which is assumed or hypothetical; but traditional questions of the 'objectivity' of value are repudiated. We may meaningfully ask "When is a character judged good?" or "What is actually approved?" but not "With *what right* is this character said to be 'good'?" or "What is absolutely *worthy* of approbation?"[3]

This repudiation of metaphysics and normative science by the logical positivists cannot, I think, be regarded as an implication of the empirical-meaning requirement alone. At least an important light is thrown upon it by taking into account that "methodological solipsism" in accordance with which their program is developed. Even though they regard this procedure as advantageous rather than prescribed, still the negations or limitations which characterize it seem to underlie their theses, in whatever terms expressed.

On its constructive side this method means no more, at bottom, than a persistent attempt so to define the different classes of objects of our knowledge that the basis of this knowledge in direct experience will be exhibited. It is of the essence of knowledge that it is in the first person. Your mind and your experience can be nothing more, for my cognition, than a construction which I put upon certain data of my own experience. If, then, we are to have a thorough and completed account of knowledge, it is not sufficient that the constitution of objects known should be traced back to experience in the merely generic sense. So far as your observations and reports enter into the construction of that reality which is known to me, they can do so only through the interpretation which I put upon certain modes of your behavior perceived by me. Actually given experience is given in the first person; and reality as it is known in any case of actual knowledge can be nothing, finally, but a first-person construction from data given in the first person.

Consonantly, we have such construction of the objects of science in general as is outlined in Carnap's *Logischer Aufbau der Welt*: first, the different kinds of for-me entities (*eigenpsychische Gegenstände*) which are constructed out of elementary experiences (*Elementarerlebnisse*), at bottom, through the relation of remembered similarity (*Ähnlichkeitserinnerung*); second, physical objects, which are constructions out of the simpler for-me things of actually given experience; third, other selves and the mental or cultural in general (*fremdpsychische und geistige Gegenstände*), which are, for actual knowing, constructions out of certain classes and certain relationships of physical things and processes.

[3] See M. Schlick. *Fragen der Ethik*, esp. I 8 pp. 10–12.

In this program we have a consistently maintained effort to be true to the nature of knowledge as we find it. The egocentric predicament is taken seriously; and the "solipsistic" character ascribed to knowing is no more strange or fantastic than Kant's transcendental unity of apperception. The manner in which the *negative* side of logical positivism is related to this same method may, perhaps, be more readily appreciated by reference to cruder but somewhat parallel considerations which are suggested by Berkeley's argument against material substance. (It was Berkeley who first adduced the requirement of empirical meaning in order to prove his opponent's concepts empty and non-significant.)

As has often been noted, the significance and applicability of Berkeley's argument does not leave off at the point where he ceases to use it. By identical logic other selves and the past and future must go the same way as material substance. If you are more than one of my ideas, how can I know it? How can I consistently suppose that I even have an interest in that untouchable you outside my mind which *ipso facto* could make no difference in my experience of you? Also, at this moment, what is that past which I remember, as more than the present recollection, or the future as more than the present experience of anticipation? All must finally dissolve into the eternal now of actually given experience.

There is even one further step for this logic to take. What am I? This self as a recognizable or conceivable particularity can be no more than one of those ideas I call mine. And Wittgenstein gives indication that he accepts the parallel methodological implication: "The subject does not belong to the world but it is the limit of the world. *Where in* the world is a metaphysical subject to be noted? You say that this case is altogether like that of the eye and the field of sight. But you do *not* really see the eye. And from nothing *in the field of sight* can it be concluded that it is seen from an eye.... Here we see that solipsism strictly carried out coincides with pure realism. The I in solipsism shrinks to an extensionless point and there remains the reality coordinated with it."[4]

I must not convey the impression that the logical positivists use Berkeleyan arguments, or that they arrive at their conclusions by such a train of thought as the above. Nevertheless this may serve to suggest how methodological solipsism comports with a thoroughgoing empiricism; and it further suggests why this procedure is to be taken as having no metaphysical implications. Subjective idealism, consistently carried through, ends by qualifying every substantive with the prefix "idea of" or "experience of," which by being thus universal becomes meaningless. Whereas Berkeley supposes his argument to

[4] *Tractatus Logico-Philosophicus*, pp. 151–153. *Cf.* Carnap, *Logischer Aufbau der Welt* §65.

establish a subjectivist metaphysics by proving the realistic metaphysics to be empty of empirical meaning, logical positivism points out that the contrary of a meaningless assertion is likewise without meaning, and hence repudiates metaphysical theses of both sorts, and the issue itself, as non-significant. Three points, here evident, contain, I think, the gist of the matter. First; when knowledge is envisaged, as it must be, from within the egocentric predicament, all objects known or conceived must reveal themselves as constructions, eventually, from data given in first-person experience. Also, what enters into such construction from past experience can only come in by way of present recollection. (This last is, I take it, the reason for the basic position of the relation of remembered-similarity in the program of Carnap.) Other selves and their experience, or their reports, can enter only as certain items of first-person experience upon which a peculiarly complex construction is put. Second; distinctions such as that between real and imaginary, or between that which is apprehensible to me alone and the object apprehended by us in common, must nevertheless find their genuine place and importance in such construction. The fact that we make these distinctions in practically useful ways evidences that they are not outside the egocentric predicament and metaphysical but inside it and empirical. They are determined by criteria which the subject can and does apply within his own experience. Berkeley, for example, offered the criterion of independence of my will as the basis for the distinction of real from imaginary. And in Carnap one finds such distinctions, and their empirical criteria, meticulously examined. Third; metaphysical issues concerning the external world and other selves do *not* turn upon such empirically applicable distinctions as those just referred to, which can be applied within first-person experience. Such metaphysical issues can arise only as it is attempted to give some second meaning to the concepts involved; meanings which do not answer to any empirical criteria which the subject can apply within his own experience. Throughout, a particular and critical point is that only first-person (*eigenpsychische*) data of experience are allowed, in the end, to enter into the construction of objects of knowledge or to function as the empirical content of any meaning.

There is, I think, one further question which is crucial for any theory of knowledge; namely, the question of immediacy and mediation, or transcendence. This has a connection with the preceding considerations; but with respect to this further problem I cannot satisfy myself that I elicit any complete and clear pronouncement from the literature of logical positivism. One can pose the principal issue involved by reference to a statement of Russell's: "Empirical knowledge is confined to what we actually observe."[5] This may seem to be a truism; but I think it is in fact thoroughly false, and demonstrably

[5] *Our Knowledge of the External World*, p. 112. The author makes this statement quite in passing, and perhaps without having in mind the point with which we are concerned.

incompatible with the very existence of empirical knowledge. Let us impose this limitation quite rigorously, in conformity with the considerations set forth above. Knowledge is always in the first person; whatever is known must be known to the subject in question, at the actual moment, within his own experience. The experience of others can enter only as certain items of their subject's own – their reports and behavior perceived by him. And the experience of yesterday or tomorrow can figure in this knowing only as it enters, in the form of memory or imagination, into experience here and now. Hence nothing can be known but what is verifiable in the subject's own experience at the moment when the knowing occurs.

Similarly for meaning. Suppose it maintained that no issue is meaningful unless it can be put to the test of decisive verification. And no verification can take place except in the immediately present experience of the subject. Then nothing can be meant except what is actually present in the experience in which that meaning is entertained. Whatever runs beyond this is unverifiable, and hence meaningless. The result of any such train of thought is obvious; knowledge would collapse into the useless echo of data directly given to the mind at the moment, and meaning would terminate in the immediate envisagement of what is meant.

This is a reduction to absurdity of both knowledge and meaning.[6] If nothing can be known but what is literally within the cognitive experience itself, and what is meant can be only that which is present in the experience which is the bearer of that meaning, then there is no valid knowledge and no genuinely significant meaning. Because the *intention* to refer to what transcends immediate experience is of the essence of knowledge and meaning both. Berkeley himself tacitly recognized that, in noting that one idea is "sign of" another which is to be expected; even the skeptic recognizes this intent of knowledge – he is skeptical precisely of the possibility that what is *not* immediate can be known. If that intention of transcendence is invalid, then the further characters of knowledge and of meaning are hardly worth discussing.

Neither the logical positivists nor anyone else (unless a mystic) intends this reduction to absurdity. But if it is something which has to be avoided by any theory which is compatible with the genuine validity of knowledge, that fact becomes important for the just interpretation of the requirement of empirical meaning. In particular, it becomes evident that the experience in terms of

[6] In order to avoid confusion with a quite different problem, the distinction between meaning in the sense of denotation and meaning as connotation should be in mind. It is only the former meaning of "meaning" which is in point in this discussion. In the classification of logical positivism meanings are (1) structural, as in logic and mathematics, or (2) empirical, as in natural science, or (3) emotive, as in art and poetry. It is meaning in sense (2) which is concerned here.

which a cognitive meaning requires to be explicated cannot be exclusively the subject's own given data at the moment of the cognition. Thus that manner of reading the implications of methodological solipsism which is suggested above would condemn that procedure to futility. If what the method requires is that objects known should be constructed or defined exclusively in terms of sense-data actually given to the subject at the moment when the knowing takes place, then that method is incompatible with the possibility of knowledge and the reality of empirical meaning.

We are here faced with a problem which runs through the whole history of post-Kantian epistemology – though it is Berkeley rather than Kant who precipitated it in its modern form. How can the knowledge-relation, or the relation of idea to the object it denotes, be valid unless what is known or meant is present to or in the experience which knows or means? But if what is meant or what is known is merely the cognitive experience itself, or something in it, then how can either knowledge or meaning be genuine?

In general there are three types of solution which have been offered. The first of these is representationalism, according to which the object never literally enters into the experience of the subject. This view recognizes, in at least one sense, the transcendence of the object known or meant; and thus avoids the reduction to absurdity which has been mentioned. The difficulty of this view is, of course, to reconcile such transcendence of the object with the possibility of knowing it. Second, there are identity-theories, both idealistic and realistic, according to which the object, or the object so *far* as it is known, is identical with some content of the subject's experience at the moment when the knowing takes place. The outstanding difficulty of this view is to avoid the reduction to absurdity, because it is incompatible with the supposition that anything can be known which lies beyond the immediate experience of the knower.[7] Such identity-theories are also liable to difficulty with the problem of error.

For the third type of theory – which includes both objective idealism and pragmatism – the object known is definable or specifiable in terms of experience, but the experience in terms of which the object is thus definable is not, exclusively, the experience of the subject at the moment of knowing; it transcends that experience. In rough general terms, objective idealism takes this relation between the experience in terms of which the object is specifiable and the experience which cognizes, to be the relation of something *deductively* implied to that in which it is implicit. That is, the present experience in which the knowing occurs – the idea or the given – is taken as determining implicitly the whole object in its reality, and as determining it unambiguously

[7] For an identity-theory of the realistic variety, the object known may transcend the knowing experience – because it is known only in part – but the object so far as it is genuinely cognized cannot.

and with certainty, if only we could be explicitly aware of all that is implied. In equally rough terms, pragmatism may be said to take this relation as *inductive*; the given experience of the moment of knowing is the basis of a probability-judgment concerning the experience (or experiences) which would verify, and in terms of which the real nature of the object is expressible.

It would probably be incorrect to take the logical positivists as holding an identity-theory of the cognitive relation.[8] But if they do not, then their conception of the object known, as constructed or 'constituted' in terms of given sense-data, requires to be interpreted so as to avoid an ambiguity which is possible. At this moment I am thinking of the wall behind my back. If I should turn around, I could verify my idea of it. But if at this moment I refer to the wall as a construction from presently given data, then the distinction between 'construction' as present concept, and 'construction' as that which this concept means to denote, is essential. Both are empirical data, if you like – but they are not the same data. The data which have their place in the concept are memories, visual and tactile images, anticipations; the data which would verify this conception would be perceptions. Not only are memories, ideas of imagination, and perceptions different events, but they are empirically distinguishable kinds of experience-content. Either, then, the wall which my idea denotes is merely the imagination-wall or recollection-wall, which is the immediate datum; or I cannot at this moment know the real wall which I mean; or – the third possibility – it is false that what I now know and mean by 'the wall' coincides with any complex of sense-data now in my mind.

It is on this point that the third type of theory is significant. For the pragmatic form of this third type knowing begins and ends in experience; but it does not end in the experience in which it begins. Hence the emphasis on the temporal nature of the knowing process, the leading character of ideas, and the function of knowledge as a guide to action. Knowing is a matter of two 'moments', the moment of assertion or entertainment and the moment of verification; both of these moments belonging to experience in the generic sense of that word. Knowledge will be true or correct only in so far as the present experience – of the entertainment of the meaning – envisages or anticipates correctly the experience or experiences which would verify it; that is, our knowledge is true if the anticipated experience is genuinely to be met with. But the entertaining experience can be truly cognitive, as against a mere

[8] There could be doubt; for example, Carnap says, "Between 'concepts' and 'objects' there is only a difference in the manner of speech" (*Logischer Aufbau der Welt*, Zusammenfassung, p. 262); and their conception of the relation between physical and mental might be taken to argue an identity-theory. But they have, I think, been principally absorbed in the problem of the *analysis* of the concept (or the object as an intellectual construction), and one should be chary of attempting to elicit from their writings any answer to the present question, which is of a quite different order. At least, I should not wish to presume to do so.

enjoyment of itself, only by the fact that what would be realized in the moment of verification is distinct from the experience which entertains or anticipates it. Otherwise error would be impossible – one cannot be mistaken about the immediate – and hence knowledge, as the opposite of error, would likewise be impossible. I do not mean to say, of course, that at the moment when something is believed or asserted it cannot have a ground in given experience, or be 'partially verified'; but it *is* meant that there must be something more, which is believed in or asserted, than what is verified immediately, if the experience is to have the significance of a knowing as contrasted with an esthetic enjoyment.

The same point can be phrased in another way by reference to the question whether, and in what sense, the datum, by means of which any item of reality is known, is distinct in its being from the cognoscendum.[9]

I should urge that any identity-theory which denies this difference between datum and cognoscendum is incompatible with the cognitive function of the idea or datum. This cognitive function is the guidance of behavior; and in order that the cognizing experience may perform this function there must be at least an element of anticipation or implicit prediction which foreshadows what is *not* here and now present in the datum.

For certain types of realism the problem thus set is taken to be that of the relation between data as items of experience and the reality in its independent existence, which is not any item or complex of items in experience. Pragmatism, in common with idealism and with logical positivism, repudiates the problem in this form as unreal.[10] For all three of these views the relation of datum to cognoscendum is taken to be a relation within experience (in the generic sense), or between one experience and others; not a relation between something in experience and something altogether out of it. The reasons for this attitude would be different in each case; but for all three views the principal ground of this repudiation is the obvious one that a relation of experience to what cannot be brought within experience is a relation which cannot be investigated, and one the very conception of which as cognitive involves a confusion of thought.

All three of these theories would agree that the cognoscendum must be defined, or constructed, or constituted for knowledge, in terms of experience. But if we are not to fall into the opposite error of the reduction to absurdity, which comes from identifying datum and cognoscendum, it must be recog-

[9] I borrow this formulation from the recent discussion of Strong and Lovejoy in the pages of *The Journal of Philosophy*, XXIX (1932) 673–687 and XXX (1933) 589–606.

[10] There may be doubt of this. I do not affirm it dogmatically; but this seems to express the intent of Dewey's denial of "antecedent reality," James's insistence that a thing is what is "known as," and Peirce's pronouncement that our concept of the effects of an object, which have practical bearings, exhausts our whole concept of the object.

nized that the experience of knowing and the experience in terms of which the object is specified cannot be simply identical.

The very simple point which is pertinent to the further issues of this paper is the fact that although knowledge is subject to the here-and-now predicament – the data must be immediate – it is essential to the cognitive function of the present experience that its cognoscendum should *not* be merely here and now. If, for example, there can be knowledge of a future event in one's own life, then the datum which is the vehicle of this anticipation is not the anticipated cognoscendum. And in so far as all empirical knowing has the dimension of anticipation or implicit prediction, the thing known is not to be identified with, or phrased exclusively in terms of, here-and-now experience. What is known now, *now* has the status of being verifiable; but in the nature of the case it does not and cannot have the status of being verifiable-now.[11] The only thing which is literally and completely verifiable-now is that which is immediate and now-verified.

This account is, of course, hopelessly inadequate, and raises all sorts of questions which cannot be dealt with here. But the points which are directly pertinent to the further discussion are these. (1) The conception that "empirical knowledge is confined to what we actually observe" is false. To know (empirically) is to be able to anticipate correctly further possible experience. If this is not the whole significance of such knowing, at least it is an essential part of it. (2) What is anticipated, known, or meant must indeed be something envisaged in terms of experience – the requirement of empirical meaning stands. But equally it is essential that what is empirically known or meant should *not* be something which is immediately and exhaustively verified, in what I have called the moment of entertainment.

It will also be of importance to consider a little the sense, or senses, of the word 'verifiable'. Like any word ending in 'able', this connotes possibility and hence connotes conditions under which this possibility is supposed to obtain. To advance the dictum that what is empirically known, and what is meant, must be verifiable, and omit all examination of the wide range of significance which could attach to 'possible verification', would be to leave the whole conception rather obscure. But instead of attempting here some pat formulation *a priori*, let us briefly survey different modes of the 'possibility' of the verifying experiences projected by meaningful assertions.

At this moment I have a visual presentation which leads me to assert that my watch lies before me on the table. If what I assert is true, then I could touch the watch, pick it up, and I should then observe certain familiar details which are not discernible at this distance from my eye. This verifying experience is

[11] We use the expression "verifiable now" oftentimes in the sense of "verifiable at will." That means literally "verifiable the next moment if I choose to meet certain understood conditions."

not actual; I do not touch the watch. But nothing is lacking for it except my own initiative. At least I believe that to be the case; and this belief is coordinate with the degree of my felt assurance that the watch is real and is mine. This is, perhaps, the simplest case of verifiability – observability at will. All the conditions of the verifying experience are present except only my intent to make the verification.[12]

Next, let us consider the other side of the moon.[13] This is something believed in but never directly observed. The belief is an inference or interpretation based upon direct observation; the moon behaves like a solid object and must, therefore, have another side. But what is believed in must, in order to be real, possess characters which are left undetermined in our belief about it. For instance, there must be mountains there; or there must be none. To speak more precisely, our belief includes alternatives which are not determined; but, if the thing believed in is what it is believed to be, these alternatives must be *determined in the object*. If there were nothing more, and more specific, to the other side of the moon than what is specifically determined in our construction of it, then it would be a logical abstraction instead of a physical reality. These undetermined characters are what we should see if we could build an X-ray telescope, or what we should find about us if we could construct a space-ship to fly up there and land. What we should observe if these things could be accomplished is what we mean by the other side of the moon as a physically real thing – as something more than a logical construction put upon presently given data.

The projected verification in this case is ideal in a sense which goes quite beyond the preceding example. It is humanly possible, perhaps; men may some day build space-ships or X-ray telescopes. But the conditions of this verification – or any other direct empirical verification of the thing in question – include some which we cannot meet at will. We cannot, by any chain of planned activity, completely bridge the gap between actual conditions and the projected verification. Obviously, then, unless belief in the other side of the moon is meaningless, it is not requisite to such empirical meaning that the verifying experience should even be possible at present, in any narrow interpretation of that word 'possible'. To analyse the conception of 'verifiable'

[12] Such a single experience would not be a theoretically complete verification of my assertion about the watch. As I have elsewhere indicated, no verification of the kind of knowledge commonly stated in propositions is ever absolutely complete and final. However, an *expected experience* of the watch can be completely verified – or falsified.

[13] It will be obvious that there are modes of verifiability which would fall between the preceding illustration and this one. For example, the verifying experience might be such as could be reached, from actual present conditions, by a more or less complicated chain of circumstances, but a chain every link of which is supposedly related to the preceding one in the manner of the first example.

which would extend to such cases would be a large order. I shall only suggest what I think might be some of the critical points. (1) As this example serves to illustrate, any reality must, in order to satisfy our empirical concept of it, transcend the concept itself. A construction imposed upon given data cannot be identical with a real object; the thing itself must be more specific, and in comparison with it the construction remains abstract. In making any verification we expect something which we cannot anticipate. This is a paradox in language; but it is, or should be, a commonplace of the distinction between ideas and objects. (2) In making 'verifiability' a criterion of empirical meaningfulness, the primary reference is to a supposed character of what is conceived rather than to any supposed approximation of the conditions of verification to the actual. (3) The requirement of 'verifiability' for *knowledge* is a stricter one, because knowing requires, in addition to meaningfulness, some ground of the assurance of truth. But, as this example makes clear, even the 'possible verification' which is requisite to empirical knowing cannot be confined to the practicalities, or by detailed comprehension of the procedure of such verification. We do not command the means for making any direct verification of our belief in the other side of the moon; but what this signifies is that, with all the means in the world, we do not *know how* to. If it be said that it is required for empirical meaning – or even for knowledge – that we should lay down a rule of operation for the process of verification, it should be observed that sometimes this rule of operation will have to be rather sketchy. This difficulty – if it is a difficulty – will be found to affect not only such extreme cases as the other side of the moon but quite commonplace items of knowledge as well.

I join with you in feeling that such considerations smack of triviality; but certainly a theory which could be overturned by such trivial facts would not be worth holding. Just what we can sensibly mean by 'empirically verifiable' is really a bit obscure. Perhaps the chief requirement ought to be that we should be able to analyse the supposed connection between the projected verifying experience and what is actually given (the 'rule of operation') in such wise that this procedure of verification can be envisaged *in analogy with* operations which can actually be carried out. The degree to which such analogy could be made complete would, I think, justly affect the significance of our supposed knowledge.

As a third example let us take the case of the electron. The existence of electrons is inferred from the behavior of oil-droplets between charged plates, tracks registered on photographs of the discharge from cathodes, and other such actually observed phenomena. But what is it that is inferred; or is anything really inferred? Some physicists, for example Bridgman, would say that our concept of the electron comprehends nothing more than these observable phenomena, systematically connected by mathematical equations in verifiable ways. The layman, however, and probably most physicists,

would not be satisfied to think of "electron" as merely a name for such observable phenomena. But what more may they suppose themselves to be believing in? An electron is too small to be seen through any microscope which ever can be made, and it would not stay put if a beam of light were directed upon it. It is equally beyond the reach of the other senses. But is the phrase "too small to be directly perceived" meaningful or is it not? And how direct must a "direct verification" be? Suppose it to be urged that no one can set a limit to scientific inventiveness, or anticipate the surprises which investigation of the subatomic will quite surely present; and that if or when such developments take place, definitely localized phenomena may perhaps be observed within the space to which the mass of the electron is assigned.

Whether this is or is not a question about the real nature of the electron, and what limitations should be imposed on useful conceptions in physics, are matters concerning which I could not have a competent opinion. But there is a general point here which all of us can judge. A hypothetical conception of an empirical reality cannot be definitely ruled out unless we can say categorically that the conditions of its verification could never be realized. Between those conceptions for the verification of which we can definitely specify a rule of operation, and those which we can definitely eliminate as theoretically impossible, there is an enormous gap. And any conception which falls in this middle ground is an hypothesis about empirical reality which possesses at least some degree of meaningfulness. If those who believe in the electron as a sort of ultramicroscopic bullet cannot envisage this object of their belief in such wise that they would be able to recognize certain empirical eventualities as the verification of it, in case the conditions of such verification *could* be met, then they deceive themselves and are talking nonsense. But if they can thus envisage what they believe in, then the fact that such verifying experience is highly improbable, and even that the detail of it must be left somewhat indefinite, is no bar to its meaningfulness. Any other decision would be a doctrinaire attempt to erect our ignorance as a limitation of reality.

The requirement of empirical meaning is at bottom nothing more than the obvious one that the terms we use should possess denotation. As this requirement is interpreted by pragmatists and positivists and others who share the tendencies of thought which have been mentioned, no concept has any denotation at all unless eventually in terms of sensuous data or imagery. It is only in such terms that a thing meant, or what a proposition asserts, could be recognized if presented to us. But, as the preceding considerations are intended to make clear, the envisagement of what would thus exhibit the denotation or verify the assertion – which is all that meaning requires – has little or nothing to do with the question whether the conditions under which the requisite presentations could be realized can be met or not. Whether such verfying experience is mine or is yours or is nobody's; whether it happens now or in the future or never; whether it is practically possible or humanly

problematic or clearly beyond our capacity to bring about – all this is beside the point when the only question is that of theoretical meaningfulness.

One may be tempted, in protest against various forms of transcendentalism and verbalism, to announce the unqualified dictum that only what is verifiable can be known, and only what is knowable can be the subject of a meaningful hypothesis. But such flat statement, while true in general, may nevertheless be misleading on account of an ambiguity in the word 'verifiable'. On the one hand this connotes a certain character of the content of one's assertion or hypothesis. This must be envisaged in sensuous terms; it must be the case that we could recognize certain empirical eventualities as verifying it, supposing that the conditions of such verifying experience could be satisfied. Verifiability in this sense requires an empirical *content* of the hypothesis, but has nothing to do with the practical or even the theoretical difficulties of verification. Whatever further restrictions may be appropriate in physics or any other natural science, the only general requirement of empirical meaning – which alone is pertinent to those hypotheses about reality which philosophy must consider – is this limitation to what can be expressed in terms which genuinely possess denotation.

On the other hand, 'verifiable' connotes the possibility of actually satisfying the conditions of verification. Or, to put it otherwise, verifiability may be taken to require 'possible experience' *as conditioned by the actual*; we must be able to find our way, step by step, from where we actually stand to this verifying experience. Hence practical or theoretical difficulties are limitations of verifiability in this second sense. These limitations may be genuinely pertinent to knowledge, because *knowledge* requires the *assurance of truth*; and whatever would prevent actual verification may prevent such assurance. But verifiability in this second sense has no relevance to meaning, because the assurance of truth is, obviously, not a condition of meaningfulness.

It is of importance to avoid confusing these two senses of 'verifiable' in assessing the significance of those considerations which methodological solipsism makes prominent. If it could be said that actual knowing must rest upon verification which, in the end, must be first-person and must be here and now when the knowing occurs, at least it would be an absurdity to translate this into the negation of meaning to whatever cannot be expressed in terms of first-person experience and of experience here and now. I impute this absurdity to no one; I would merely urge the necessity of avoiding it.

It is likewise important, in the same connection, to bear in mind what have been called the two moments of cognition. It is a fact that past experience is a given datum only in the form of memory; the future, only in the form of imagination. And the reports of others are data for the knower only in that form in which they lie within the egocentric predicament. Hence any idea which can occur with cognitive significance must be a construction by the knower, ultimately in terms of first-person present data. These predicaments,

however, are limitations of the moment of entertainment. If one should conclude that because the cognizing experience must take place within the boundaries of the first-person and the immediate, therefore the object of that knowledge, so far as it is genuinely known or meant, must also lie within those limits, one would be overlooking the distinction between the experience which entertains and the projected experience which would verify what is thus entertained. The distinction of these two is of the essence of cognition as contrasted with esthetic enjoyment of the immediate. To identify them would be to reduce knowledge and meaning to absurdity. Again, I do not impute to anyone this identification of the idea, in terms of immediate data, with the object, specifiable in terms of possible experience or experience which is anticipated. I would only urge the desirability of avoiding this fallacy.

In the time which remains it is a bit absurd even to suggest any bearings which the above may be supposed to have upon metaphysical problems. But with your indulgence I shall barely mention three such issues.

One traditional problem of metaphysics is immortality. The hypothesis of immortality is unverifiable in an obvious sense. Yet it is an hypothesis about our own future experience. And our understanding of what would verify it has no lack of clarity. It may well be that, apart from a supposed connection with more exigent and mundane problems such as those of ethics, this hypothesis is not a fruitful topic of philosophic consideration. But if it be maintained that only what is scientifically verifiable has meaning, then this conception is a case in point. It could hardly be verified by science; and there is no observation or experiment which science could make, the negative result of which would disprove it. That consideration, however, has nothing to do with its meaningfulness as an hypothesis about reality. To deny that this conception has an empirical content would be as little justified as to deny empirical content to the belief that these hills will still be here when we are gone.

Next let us consider that question about the external world, supposedly at issue between idealists and realists. One suspects that the real animus of debate between these two parties is, and always has been, a concern with the question of an essential relationship between cosmic processes and human values; and that if, historically, idealists have sought to capture their conclusion on this point by arguments derived from a Berkeleyan or similar analysis of knowledge, at least such attempt has been abandoned in current discussion. So that this question about the external world, in any easily statable form, is probably not pertinent to present controversy. But there is one formulation which, if it is too naïve to be thus pertinent, at least poses an intelligible question about the nature of reality. Let us phrase this as a realistic hypothesis: If all minds should disappear from the universe, the stars would still go on in their courses.

This hypothesis is humanly unverifiable. That, however, is merely a predicament, which prevents assurance of truth but does not affect meaning.

We can only express or envisage this hypothesis by means of imagination, and hence in terms of what any mind like ours *would* experience if, contrary to hypothesis, any mind *should* be there. But we do not need to commit the Berkeleyan naïveté of arguing that it is impossible to imagine a tree on a desert island which nobody is thinking of – because we are thinking of it ourselves. It is entirely meaningful, for example, to think of those inventions which nobody has ever thought of, or those numbers which no one will ever count; we can even frame the concept of those concepts which no one will ever frame. Those who would deny this on logical grounds exhibit a sense for paradox of language which is stronger than their sense of fact. Furthermore, *imagination* is sufficient for empirical meaning, though it requires *perception* for verification. I can imagine that future time which I shall never perceive; and humans can meaningfully think of that future when humanity may have run its cosmic course and all consciousness will have disappeared. It may be that the hypothesis of a reality with no sentience to be affected by it is not a particularly significant issue; though the idealist might have an interest in it for the sake of the light which decision about it would throw upon the nature which reality has now. In any case, the fact that it is unverifiable has no bearing upon its meaningfulness. Whether this hypothesis is true, is a genuine question about the nature of reality.

Finally, we may turn to the conception of other selves. The importance which this topic has for ethics will be obvious. Descartes conceived that the lower animals are a kind of automata; and the monstrous supposition that other humans are merely robots would have meaning if there should ever be a consistent solipsist to make it. The logical positivist does not deny that other humans have feelings; he circumvents the issue by a behavioristic interpretation of "having feelings." He points out that your toothache is a verifiable object of my knowledge; it is a construction put upon certain empirical items which are data for me – your tooth and your behavior. My own toothache is equally a construction. Until there are such prior constructions as the physical concept "teeth," from given sense-data, neither your toothache nor mine is a possible object of knowledge. And, similarly, until there is a construction involving such prior constructions as human bodies, there is no own-self or yourself as particular objects of knowledge. As knowable things, myself and yourself are equally constructions; and though as constructed objects they are fundamentally different in kind, the constructions are coordinate. That experience which is the original datum of *all* such constructions is, in Carnap's phrase, "without a subject."[14] Nevertheless it has that quality or status, characteristic of all given experience, which is indicated by the adjective "first-person."

[14] See *Logischer Aufbau der Welt*, §65.

With the general manner of this account of our knowledge of ourselves and others I think we should agree. But it does not touch the point at issue. Suppose I fear that I may have a toothache tomorrow. I entertain a conception involving various constructions from present data; my body, teeth, etc. But my present experience, by which I know or anticipate this future toothache, is not an experience of an *ache*. There is here that difference which has been noted between the experience which entertains and the experience which would verify, to which it implicitly refers. A robot could have a toothache, in the sense of having a swollen jaw and exhibiting all the appropriate behavior; but there would be no pain connected with it. The question of metaphysical solipsism is the question whether there is any pain connected with your observed behavior indicating toothache. The logical positivist claims that this issue has no meaning, because there is no empirical content which could verify the non-solipsistic assertion – that is, no content unless, following his procedure, I identify your pain with observable items such as the behavior which exhibits it; in which case it is verifiable in the first person. To make this identification, however, is to beg precisely the point at issue.

Let us compare the two cases of your toothache now and my toothache tomorrow. I cannot verify your toothache, as distinct from your observable behavior, because of the egocentric predicament. But neither can I verify my own future toothache – because of the now-predicament. My tomorrow's pain, however, may genuinely be an object of knowledge for me now, because a pain may be cognized by an experience in which that pain is not a given ingredient. (The imagination of a pain may be painful; but it is not the pain anticipated. If it were, all future events which we anticipate would be happening already.) *Your* pain I can *never* verify. But when I assert that you are not an automaton, I can envisage what I mean – and what makes the difference between the truth and falsity of my assertion – because I can imagine your pain, as distinct from all I can literally experience of you, just as I can imagine my own future pain, as distinct from the experience in which I now imagine it.

In the nature of the case I cannot verify you as another center of experience distinct from myself. Any verification which I might suppose myself to make would violate the hypothesis by being first-person experience. But there is nothing to which I can give more explicit empirical content than the supposition of a consciousness like mine connected with a body like my own. Whether there is any such would be a terribly important question about reality if anybody entertained a doubt about the answer. Whether you are another mind or only a sleep-walking body is a question of fact. And it cannot be exorcized by definitions – by defining 'meaningful' so as to limit it to the verifiable, and 'verifiable' by reference to the egocentric predicament.

This conception of other selves as metaphysical ultimates exemplifies the philosophic importance which may attach to a supposition which is never-

theless unverifiable on account of the limitations of knowing. Though empirical meaning is requisite to theoretical significance – and that consideration is of first importance in guarding against verbal nonsense in philosophy – still the sense in which a supposition is meaningful often outruns that in which the assurance of truth, by verification, can genuinely be hoped for. In limiting cases like this last question it may even outrun the possibility of verification altogether.

MEANING AND ACTION

C. I. Lewis. "Meaning and Action." *Journal of Philosophy* 36.21 (12 October 1939): 572–576.

To say anything new and important about Dewey's logic would be, I suspect, beyond my powers. I shall not attempt it but, instead, wish to offer here brief comment on one conception of his, which I take to be central for his logic and for his point of view in general, and which I believe to be both correct and important: the conception, namely, that meaning and action are essentially connected.

Dewey does not write by the method of theorem and corollary; and one does not find any single statement into which the full significance of this thesis has been compressed and from which all its implications can be drawn. But what is here in question is no platitude, to the effect that since humans are active beings their meanings are likely to reflect their interests and their practice. Nor does it merely serve to point an emphasis, characteristic of the theory in which it appears but setting it in opposition to no other which could plausibly be maintained. Rather, it is the distinctive conception, incompatible with most views, that the cognitive or meaning situation does not admit of bifurcation into an activity of the knower and a preformed object which is contemplated; that knowing or meaning is integral with other activities which shape the objects to which they are addressed; that meanings themselves serve to frame the situations of action into which they enter, and exercise an operational force upon what they serve to formulate. It is implied that an idea or a meaning, apart from some possible action and the reality in which it should eventuate, is a fictitious entity not found in human thinking. And conversely, it is implied that the objects of knowledge, without reference to meanings and the actions to which they may lead, are equally fictitious. From this conception there issues a sharp challenge to those views – comprising the greater number – which would portray the reality known as "antecedent" to the activity of knowing, and to "spectator" theories of knowledge which would represent the knower as a disinterested contemplator of a ready-made world which *qua* knower he does not affect.

So far from being a commonplace, this thesis, when fully grasped, has something of the aspect of a hard saying. Almost it is as if Dewey had claimed that all meanings and all inquiry are subject to a kind of indeterminacy principle. Thought itself displaces or transforms that which it means or

inquires about: but if it thus affects the object concerned, how can inquiry disclose what it sets out to reveal? One can not suppose that this thesis has met with that acquiescence which the relative absence of discussion would suggest. Its force has been insufficiently felt. This conception has not been generally accepted by philosophic readers; but it has been answered mainly by neglect.

Yet however contrary to prevailing views, or even paradoxical, this conception may be, the considerations which would enforce it are fairly obvious. That thinking, meaning, knowing are other than – as Dewey claims – activities performed at need, is *prima facie* implausible. But if they are thus instigated, an effect of them upon that to which they are directed is implied. That the activity of the knower is itself a part of the world-process and a factor in determining its events could not easily be denied. But if it is such, then plainly the conception that objects of inquiry are merely given to a contemplative knower, must be fundamentally erroneous.

For example, empirical knowledge, on almost any view, will be admitted to have the aspect or the pervasive implication of prediction. Any report of empirical fact, and any generalization such as a law of natural science, leads either to categorical predictions of future events or to hypothetical predictions that such and such will take place under certain specifiable circumstances. And that the main if not the exclusive motive of science and empirical knowledge in general is found in the possibility of such predictions will be denied by no one. Yet if the world-process were that kind of antecedently determined enchainment of events which it is often supposed that science must take it to be, in order that such prediction may be possible and valid, then precisely in being thus predictable reality must be inaccessible to and unalterable by any activity of the knower. In that case, what boots it to know this completely inevitable futurity? It requires no initiative on our part – cognitive or of any other sort – to "avoid the impossible and cooperate with the inevitable."

Such considerations might perhaps meet with the reply that our aim in knowing what is predetermined lies in something else; that we wish to know whether it will rain, not in order to affect the weather, but in order to know whether to carry an umbrella. But if this way of meeting the difficulty – suggested by the common-sense answer in our trivial example – were to be taken as a satisfactory kind of analysis of situations in which knowledge and action are involved, it would lead to difficulties which are serious if not insuperable. Because it would seem to assume that there are two sorts of futurities; those which are predetermined for our inquiry and about which alone unconditional predictions can be made – "It will rain" – and those which are not thus antecedently determined – "I shall get wet" – which depend on what we do in the light of this knowledge. The former classes are inaccessible to our action; the latter are not cognitions of objective reality but matters of decision. By implication, the world-process must be viewed as

divisible into those events which are unconditionally predictable and about which we can do nothing, and those our activity can affect but which are not the objects of any cognitive inquiry. Fully carried out, this would lead to the conclusion that knowledge – or at least knowledge as having implications for the future – is exclusively of the inevitable; but that this knowledge is of practical value exclusively for its bearing on what is unpredictable.

The point is not so much that one who should elevate the attitude suggested to the status of philosophical analysis would stand in danger of violating his own systematic presuppositions – though that is a fact. It is not consistently possible to carry out such a double-aspect view of the world: to think of it as if one could, *qua* knower, view it as made up of predetermined and unbreakable chains of events, with one's self outside and looking on; and then, having through such passive receptivity acquired knowledge, could step out of one's contemplative rôle and take a hand in shaping the future thus predicted. One can not in this fashion place the subject, who both knows and acts and whose knowing is integral with and for the sake of his acting, both in and out of the process of events to which his knowing and his acting are addressed. But I say that this is hardly the point: probably that "universal determinism" sometimes supposed to be an essential presupposition of science is not something to be judged false or true but merely a pedantic fable; such that even if admitted in words it could find no application to any actual situation in which a human investigator has a real purpose in prosecuting an inquiry.

The more important point is one which concerns the meaning of our predictions themselves – and so far as empirical knowledge is implicitly predictive, the meaning of what we know in general. Such meaning can not exclude but must include the significance of the knower's activity. Because the validity of a genuinely cognitive meaning must be capable of verification. That a substantive meaning applies or does not apply, that a proposition is true or false, must be capable of test. And what tests are pertinent, must be implicit in the meanings themselves. Whoever speaks of *X* but does not know how it could be determined whether a presented thing is *X* or not, means nothing by his term: whoever asserts *P* but could not specify how the truth or falsity of *P* should be determined, makes no genuinely meaningful statement. So much of the pragmatic conception of meaning is quite generally accepted, and could not well be denied; though hairs may be split in the interpretation of it.

The meaning of a prediction, or of a cognition implying predictions, must be found in some future possible experience or experiences which would confirm its truth. *But there are no such verifying or confirming experiences which can be predicted without reference to the activity of the subject.* There are no future experiences which, concretely enough specified, are inevitable. There could be no experience of ours genuinely foreseeable but such that literally we could do nothing about it. In fact, precisely the point of foreseeing

what is called "inevitable" – and it is seldom the experience itself which is so called – is that at least we may blunt the poignant painfulness of what is anticipated, or sharpen and clarify its satisfying quality, by our foresight. And in the case of most predictable eventualities, we can do something more than merely to modify their character as experienced by going forward to meet them in an altered attitude.

Furthermore, there is no dichotomy between categorically predictable eventualities – "It will rain" – and hypothetical and avoidable ones – "I shall get wet." All verifications, all predictable confirming experiences belong in the second classification. The fact of rain is verifiable only by some manner of experiencing it; by getting wet, or by seeing it, or hearing it, or.... But we shall not get wet if we protect ourselves; and there would be some manner or another of avoiding any one of these verifying experiences. We might refuse altogether to put our statement to the test. Each such possible verification turns out, on examination, to be some eventuality which will accrue or not accrue according as we adopt or refuse to adopt some attitude or course of action. And beyond such future possible experiences which would verify it, "It will rain" means nothing. Put in general terms, the meaning of any "fixed" or "objective" fact which could be believed in or asserted has, as the final terms of its analysis, some set of hypothetical propositions, the hypotheses in which concern some mode of action. In this nature of our empirical meanings lie the connection between knowing and doing, and the explanation of the fact that knowledge of that reality which "is what it is independently of being known" has application to our practice.

There would not be space here for comment on the consequences of this point concerning meanings. And, obviously, my discussion has been inadequate to the point itself. It is the less necessary to elaborate these implications because so many of them have been made clear in Dewey's writings.

Section Four

Evaluations of Lewis on Pragmatism

MR. LEWIS'S THEORY OF MEANING

George Boas. "Mr. Lewis's Theory of Meaning." *Journal of Philosophy* 28.12 (4 June 1931): 314–325.

Recent discussions of the meaning of meaning derive largely from Peirce's famous essay called "How to Make Our Ideas Clear." This essay, which was written for popular consumption, is of course none too precise, but in general its students have found its central point in the following formula, "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object."

An examination of this formula and its application by Peirce will show that the difficulties of his theory spring from ambiguities and obscurities in the following terms.

(1) What sort of effects are practical effects?

a. Are they sensible effects, in the believer's experience or in all believers' experience or in some believers' experience?

b. Are they "useful" effects, in the sense of desired effects, or supposedly desirable effects? Are they effects upon the believer's behavior or someone else's behavior or all behavior? Are they effects upon other objects of conception? Are they *necessary* effects or accidental effects? Are they effects of the *conceiving* of the object or effects of the *object* if it exists?

(2) What is the object of our conception? Is it a "thing" or a fact? This comes down to the question of the possibility of having a conception of an entity in isolation, aside from a mental image. Should the term "conception" be used both for mental images (if there be any) of things and judgments about the interrelations of things in time and space? This question is not simply one of verbal usage, but involves the theoretical problem of whether so-called mental images and judgments are sufficiently alike in fact as to be called by the same name.

(3) This is, then, the third question. What are *conceptions* or, to use the word in the title of the essay, *ideas*? In order to answer this question, it is obviously not enough to take some privately constructed theory of ideas and try to apply Peirce's theory to them but it is necessary to find, if possible, something in what used to be called our thinking of which it makes sense to say that it has meaning and see whether Peirce's theory actually describes it or whether it leads to absurd consequences.

This list of three questions shows at least some ambiguity in Peirce's theory and there are still other questions that might be asked. Most of the literature on the subject since 1878 has been built up by assuming that one possible definition of the terms used by Peirce is the "right" one. Definitions are, of course, arbitrary in the last analysis, but we sometimes call the usual definition the "right" one and when there is general agreement upon a definition no harm is done. Still, words used in philosophic discourse are so notoriously vague and the things and facts they are supposed to name so slippery, that one finds it almost impossible to be sure he has correctly understood any proposition in this field. And by "correctly" we mean "in the sense the author meant it to be understood." The discussion of "meaning" in Mr. C. I. Lewis's *Mind and the World Order*, as one might expect from its author, is almost uniquely free from the vagueness of his predecessors in this field and consequently provides a contribution to the theory in general that is peculiarly valuable.

Mr. Lewis's theory is in the tradition of Peirce. Peirce's object was, of course, to induce people to stop talking about things which they could know nothing about, to stop pronouncing unverifiable propositions. His paragraph on the ethical importance of clear ideas reads like a page from Bacon. Mr. Lewis's whole book is an attempt to achieve the clarity and precision of which Peirce pleaded the cause and though he never grows lyrical about the social good of clarity, he is dominated by a desire for clarity as an end in itself.

We may as well say at the outset that although Mr. Lewis's terminology is preëminently univalent (*eindeutig*) there are occasional discrepancies between his theory of meaning and his use of the word. It is difficult at times to know whether it is not equivalent with "designation" (p. 52), "signification" (p. 53), "interpretation" (p. 55), "connotation" (p. 57), "intention" (p. 60), "denotation" (p. 60), and so on, but I doubt whether such difficulties are an effective bar to understanding the theory as a whole or are serious enough to deserve more than mention.

Mr. Lewis's theory of "conceptualistic pragmatism" makes a sharp distinction between two realms of knowledge, the realm of "experience" and the realm of "concepts." The distinction between these two realms is not very different from that of Kant, although their peculiar relationship is explained on what purports to be an entirely un-Kantian basis. The three theses which Mr. Lewis defends are presented to the reader in his preface. They are as follows:

(1) "*A priori* truth is definitive in nature and rises exclusively from the analysis of concepts."

(2) "While the delineation of concepts is *a priori*, the application of any particular concept to particular given experience is hypothetical; the choice of conceptual systems for such application is instrumental or pragmatic, and empirical truth is never more than probable."

(3) "That experience in general is such as to be capable of conceptual interpretation, requires no peculiar and metaphysical assumption about the conformity of experience to the mind or its categories: it could not conceivably be otherwise" (p. x).

The result of these theses, if proved, is that what Kant would have called the form of experience is *a priori* but its matter *a posteriori*. But while what we shall continue to call the mind may analyse forms and discuss their interrelations, the fitting of experience to them is always experimental, tentative, and practical. In Kant they fitted, for after all in Kant there were no objective relations and, strictly speaking, all that could be discovered was what matter fitted into the mind's forms. This is not accepted by Mr. Lewis, as I understand him, for nature consists for him, I believe, in both terms and relations; both can be discovered, but every discovery is guided by rules and criteria which are presupposed.

The preliminary advantage of this point of view is that although it deprives empirical knowledge of certainty, it frees mathematics and logic from uncertainty. The disadvantage is that in giving mathematics and logic certainty, it makes them tautological, and denies the possibility of synthetic *a priori* judgments.

The distinction of two cognitive realms, the empirical and the *a priori* comes down to a rejection by Mr. Lewis of esthesis as knowledge. For him knowledge must involve interpretation and hence a conceptual element. "There is no knowledge," he explicitly states, "merely by direct awareness (p. 37. Cf. p. 38f.). This insistence upon the difference between knowledge and the sensuously given is of such importance not only for an understanding of Mr. Lewis's theory but of the whole pragmatic movement, that it is worth dwelling upon here. That this distinction is believed important by Mr. Lewis is demonstrated by the space he gives it.

Knowledge, then, for Mr. Lewis is the conceptual interpretation of the sensuously given and that interpretation takes time. The temporal extension of the interpretative process is what makes the verification of knowledge incomplete and precludes truth by correspondence according to the traditional formulae. For unless ideas in the sense of sensuous content and ideas in the sense of implicit or possible (if not actual) assertions, are the same, there is correspondence only in the former case between ideas and their objects. Aside from the question of whether there are such entities – i.e., as sensuous content – it is certain that what meaning they might be expected to have is entirely different from that possessed by ideas in the second sense. The specific patch of color before me may be said to mean a red rose, but it would be just as simple to say that it *is* a red rose, unless I have already assumed the existence of an infraperceptual red rose of which it is the sensum. But even with that assumption of a dualism between sense-data and what they represent, the representation consists in the symbol's being simply the effect

of a non-given cause, if such language is permitted me. It is certainly not the same relation as that between a red flag and an auction or the name "George Washington" and the man.

It is because of a confusion between ideas as mental content and ideas as interpretations or hypothetical judgments, both of which involve an apparent dualism like that recognized by common sense between symbol and symbolized, that answers to the first question are held to be answers to the second. Thus it would seem to be believed by certain epistemological dualists that the occurrence of a mental content of even the simplest sensory sort, since it is what Mr. Lovejoy has called the vicarious presence of an object different from it, carries with it the information of the object of which it is the vicarious presence. It is precisely that which Mr. Lewis denies, since if the transcendent reference of such ideas – i.e., sense-data – could be read in the sense-data with no more ado than inspection, error would be as impossible as in epistemological monism and disputes about physical objects and the host of supposititious scientific objects would never arise.[1]

It is then only in the case of interpretation or judgment, when something is specifically asserted either about the sense-data or about other entities, that the question of truth or falsity and consequently the question of meaning enters. For the concept is defined by Mr. Lewis as a meaning. It is "that meaning which must be common to two minds when they understand each other by the use of a substantive or its equivalent" (p. 70). That there is such a community of meaning is admittedly an assumption (pp. 70, 72), for the only way in which it can be detected is by the reports of various minds and their subsequent acts. In so far as this meaning is carried by an idea in the sense of a sense-datum, there is no telling whether two people have the same idea – except by introspective reports, which may be unreliable. But that is of no more importance for a consideration of community of meaning than the fact that two symbols as unlike as *cheval* and *horse* may mean the same thing. So long as our definitions and their applications to the presented are alike, we can communicate with one another and share meanings. But how can *A* know that his definitions are the same as *B*'s and that he is applying them in the same way, when their esthetic data are private and ineffable? Mr. Lewis seems to recognize this difficulty for he says (p. 77) that no concept would have meaning "if we could not, through the terms in which that meaning is explicated, get back eventually to concepts which are correlated for us with specific and identifiable qualities of sense." That is, *cheval* and *horse* could not be known to mean the same thing unless the Frenchman and the Englishman correlated the symbols with what turns out to be the same

[1] This, of course, does not concern the dualism between present content and extrapolated unpresented content. See *The Revolt Against Dualism*, p. 268f.

sensible object.[2] It would seem to follow that if a term were correlated on no level of experience with any sensible object, real or imaginary, that it had no meaning.

The two explications of meanings – by definition and by behavior – are of different status. Definitions exhaust the denotations of the terms, but are confined to the realm of concepts (p. 79). Behavior is used almost exclusively in conveying the meaning of a word where the concept itself is already something shared (*Ib.*). This would seem to give us not merely two kinds of things which possess meaning, but two kinds of meaning, the kind of meaning words have and that which concepts have. But nevertheless there must be some priority between them, unless concepts and language are entirely disparate, which of course they are not.

Leaving the meaning of concepts aside – and concepts, be it noted are the relational element in experience – the meaning of words, which seems to correspond to the meaning of the "given," is what the given, sense-datum or percept, suggests of a "practical" nature (p. 49f.). In interpreting this meaning, two relations of the given are revealed, (*a*) that of the immediately presented to further actual or possible experience, and (*b*) its relation to my interest and action (p. 51). These both seem individualistic and one gathers that the meaning of the immediately presented is only social in so far as it accidentally happens to be so. For Mr. Lewis has said, "All that comes under this broad term 'meaning' (unless immediate value or the specificity of sense-quality should be included) is brought to this experience by the mind, as is evidenced by the fact that in this respect the experience is alterable to my interest and my will" (p. 51). Thus the sense-datum has in itself as so much color or sound or what not no meaning of any type, but acquires meaning through the use to which it is put. How grossly utilitarian such meaning may be is not indicated by Mr. Lewis, but that it must be tested by the "pragmatic test" of Peirce and James is admitted by him in an important footnote (p. 64f.).[3] But apparently no more is intended than that nouns indicate human purposes rather than human observations. "My designation of this thing as 'pen' reflects my purpose to write; as 'cylinder' my desire to explain a problem in geometry or mechanics; as 'a poor buy' my resolution to be more careful hereafter in my expenditures" (p. 52). At the same time if I refer to your pen as a pen, I do not necessarily do so with any purpose to write, though it is true that this word "pen," originally meaning a feather, has come to mean an instrument. But what has its instrumentality to do with its meaning? "If this is a pen, it can satisfy my purpose to write," is certainly not equivalent to, "If this satisfies my purpose to write, it is a pen." This seems like silly

[2] But, as we say, the privacy of sense-data makes this correlation theoretically impossible.

[3] See also (p. 34) the caution against interpreting pragmatism too biologically.

quibbling in this place, but apply it to the cylinder. "If this is a cylinder, it will help explain a problem in geometry"; "If this helps explain a problem in geometry, it is a cylinder." But though only a pen will fulfill a purpose to write in a certain way and only a cylinder will solve certain geometrical problems there is no more reason to make the utility equivalent to the meaning than to make the inherent formal properties of the objects named the basis of their utilities. The cylinder solves the problem because it is a cylinder and the pen writes because it is a pen. If only cylinders and pens fulfill the specific purposes in mind, then it obviously makes no difference whether the object or the purpose is stated as basic. For propositions noting the relation between object and purpose are like definitions and therefore simply convertible.

If, however, this be true, then meanings in behavior are just as analytic and *a priori* as meanings in conceptual thought. For it would either make nonsense to say, "If any writing instrument is a pen, then a pencil is a pen," or else it would be true. If it is nonsense, that is because formal properties are recognized – and not necessarily by use – in an instrument which makes it a suitable instrument, in which case the meaning of a term is not simply practical, but is indicative of observable characteristics which I have been calling "formal." Thus a cylinder has been defined as "the surface traced out by a line, named the generatrix, which moves parallel to itself and always passes through the circumference of a curve, named the directrix." One can see whether a thing is a cylinder or not by applying certain tests. And it is incontestable that if there were no way of telling whether things were cylindrical or not, there would be no sense in using the term. But at the same time the only purpose of mine its cylindricity as such could fulfill would be the purpose of applying the tests of cylindricity. It seems to the writer important to bear this in mind, for if all our contact with the world is purposeful then the word "purpose" has lost its selective and specific meaning.

Moreover, by bearing this in mind one may retain the benefits of the pragmatic technique and of operationalism without having to accept the peculiar metaphysics associated with it. I should admit that unverifiable truths and untestable meanings had best be omitted from all discussion. At the same time those who say that the proposition, "If sodium is burned, a yellow flame will be seen," is identical with the proposition, "Sodium is the sight of a yellow flame" seem to me to be talking nonsense. For one can not pretend that the sight of a yellow flame has the atomic weight of 23. Difficulties of this sort are numberless if this strict interpretation of operationalism is adhered to.

It is not entirely clear to what extent Mr. Lewis goes with his pragmatism. Though he maintains that there is a realm of *a priori* knowledge which can not be invalidated by experience, yet he agrees that "the ultimate criteria of the laws of logic are pragmatic" (p. 24). This is based upon the discovery that there is no basis within any logic for choosing it rather than another. Hence

the choice must be made on external grounds which "human bent and intellectual convenience" (p. 248) determine. That the purely *a priori* has such applicability, that it may serve human bent and intellectual convenience can surely be no accident. It is true that queer algebras and logics may be invented, but it is not true that they are equally convenient. Their convenience certainly is grounded upon their conformity to experience, as the specific utility of a pen is grounded in its specific makeup. This is admitted by Mr. Lewis when he speaks of definitions in the natural sciences (p. 257). "If definition is unsuccessful, as early scientific definitions mostly have been, it is because the classification thus set up corresponds with no *natural cleavage* and does not correlate with sufficiently important *uniformities of behavior*" (my italics). The natural cleavages would thus seem to be the basis of the utility of the definition. But Mr. Lewis no sooner stated this than he denies it. "The alchemist's definitions of the elements, for instance, are the clue to his indifferent success; the definitive properties pick out amorphous groups which have little significance of further uniformity. Not until such crucial properties as combining weights become the basis of classification is it possible to arrive at satisfactory laws of chemistry. *The earlier definitions can not be said to have been false; they were merely useless or insufficient to the purposes in hand* (p. 257f. My italics).

It is, of course, true that combining weights are determined by certain tests which chemists chose to make and hence are no more essential in the metaphysical sense than the older and more superficial definitory characters. But at the same time they do not constitute definitions which are arbitrary in the same sense that the definitions of "point," "line," and "plane" are arbitrary in geometry. For the constancy of combining weights is the one common property that all elements have; it is not merely assumed that they have it; and though few actual specimens in a chemical laboratory perfectly illustrate the law, they illustrate it to a very high degree. Its convenience is thus explicable and not final. It might have been much more convenient if elements would combine by volume rather than weight, but that consideration has never had much influence upon the elements.

There is no doubt that "the naming, classifying, defining activity is at each step prior to the investigation" (p. 259). It is also true that "we cannot even interrogate experience without a network of categories and definitive concepts.... We must first be in possession of criteria which tell us what experience would answer what questions, and how, before observation or experiment could tell us anything" (*Ib.*). All that is granted. But having our preliminary categories and definitive concepts, we set to work to apply them to nature. Sometimes they work; sometimes they do not work. When they do not, we are sure that they are wrong. When they do, we have a suspicion, but no certainty, that they are right. If we have no reason to suspect them, we retain them. If we find them contradicted, we reject them. That is actual scien-

tific practice, as we all know. And though the reasons for accepting a definition or category are pragmatic, those for rejecting one are not. If we have no impulse to apply our categories, then one set is obviously as good as another. But if one were to apply the test of Peirce and James to such categories, then until they were tested at least in imagination by experience they would not even have meaning.

Mr. Lewis seems to feel that the contradiction of the *a priori* by experience is no proof of its falsity (p. 264). We have admitted that its correlation is no proof of its truth. But the two situations are different, both theoretically and practically, and because we may choose to cling to old theories though they begin involved and cumbersome – such as the Ptolemaic system in the seventeenth century – is no reason to cling to them when what they imply is definitely disproved by a crucial experiment. Thus the phenomena described in the law of falling bodies may not be accurately explained by Newtonian physics, but merely consistent with it. But we know that if it be true, the Aristotelian physics is false. By a revision of Aristotelian physics we may be able to account for the phenomena as well as by Newtonian physics. But a revised theory is not a theory before revision. And though some men might still cling to the contradicted theory on the ground that all the contradictory experiments were sleight-of-hand tricks or magic, such a person would mean by tricks and magic what normal people mean by natural circumstances.

But even in the case of the most abstract categories – those of logic and geometry – in what sense are they prior to experience? It has been asserted, for instance, that though their genesis is in experience they can not be either validated or invalidated by any empirical situation. Thus "*p* is either true or false" is true regardless of whether *p* is actually true or false and in that sense of the word is prior to experience. At the same time both true and false propositions are found even in the crudest empirical judgments, recognized as such by people innocent of all logic.[4] The incompatibility between truth and falsity is again recognized empirically when even children catch each other lying. Were there a third logical value besides truth and falsity in experience, it is certainly highly doubtful whether "p is either true or false" would ever have been postulated. When meaningless propositions and propositional functions were recognized, qualifications to exclude them from the argument were made. It is, of course, true that one can invent a third value and work out a calculus of implication from a trivalent logic. And it is equally true that such a calculus would be logically prior to any implications made by its means. At the same time its very divagation from the bivalent logic we use would be evidence of its experiential origin, for just as one makes the generalization,

[4] Mr. Lewis recognizes this difficulty, but he avoids it by the theory of "unconscious meaning," or "meanings implicit in behavior" (p. 85). Whose meanings are they then? The "behavers" or the "behaviorists"?

"All crows are black" from observing crows, so we could assert, "Some crows are not black," in denial of the experiential generalization. It would, let us assume, not be true of experience, but that would not prevent its having an empirical origin.

If we do not grant human nature the power of abstracting, generalizing, contradicting, imaginatively combining, the tentative discoveries it makes in its dealings with the world, then to be sure the use of concepts and categories becomes a mystery. Mr. Lewis is perhaps too content to leave it a mystery. "The question," he says (p. 69f.)," how meaning *can* be objective and shared, when the psychological states which are bearers of this meaning are separate existences and not even identical in their qualitative content, is one of the important problems of meaning." And again, "That meanings may have this sort of objectivity is a fundamental assumption of science or of any other intellectual enterprise.... There must be meanings which are common to minds when they coöperate in scientific or even in merely practical endeavors. Otherwise the coöperation is illusory; and one cannot escape the question how such common meaning stands related to different minds or psychological states which mean" (p. 70).

Mr. Lewis (p. 71) rejects the Platonistic and neo-realistic answers to this question. He also refuses (p. 72) to resign the problem to the psychologist, since he too must begin by assuming the existence of common meanings like the rest of us. He admits (p. 91) that the possibility of common concepts is conditioned "first, by the fact that we are creatures fundamentally alike, having in the large the same needs and interests and powers of discrimination and relation; and second, that we are confronted by a common reality mediated to us in sense-experience which is comparable." In this passage and in the paragraph following, the coincidence of concepts seems to be based largely on coincidence of bodily reactions in the common reality, and not at all on a transcendental unity of apperception which earlier passages might suggest. But here a question of fact is raised. If our common ways of behaving are not necessarily mediated "by any direct psychological identity of experience" (p. 92), then how in the world would Richard Roe know that his ways of behaving are identical with those of John Doe? For it is perfectly possible for two people to behave alike without knowing it. Indeed John Doe has to be aware of his modes of behavior and of Richard Roe's and of their similarity and the same thing has to be true of Richard Roe. This also seems to be admitted by Mr. Lewis (p. 103), but with no sense of its importance, when he says, "I correctly attribute a certain purpose, like mine, to another if I observe that he performs an act like mine and suppose correctly[5] that it

[5] The word "correctly," of course, presents the whole problem. How could one test its meaning in this case?

is the result of an intention involving the same congruence between anticipation and result which I find in my own case." But he denies, and perhaps rightly, that one need suppose that "either purposes in general or the content of this act in particular are, as items of immediate experience, identical in his case and in mine, in order to 'understand his purposes'" (p. 103). But if one is not to have identity of immediate experience – and it is hard to see how one could have on Mr. Lewis's theory – one has simply identity of meaning and that is an end of it. But that discovery is not a solution of the problem of common meaning.

My point here is that identity of behavior – as so much matter in motion – could never convey identity of meaning, otherwise a wheel on one end of an axle might be said to have a knowledge of its identity of purpose with the wheel on the other end. Mr. Lewis's point is that speech is a form of behavior and apparently that what one form of behavior can do another can.[6] But it is precisely by the fact that language conveys meanings that it is differentiated from other forms of behavior. But to note that is to note the primacy and mystery of meaning, and not to give a theory of it. It may well be agreed that language would be meaningless if its terms could not be correlated with certain bodily movements, for bodily movements are the only way we have of expressing our thoughts. To avoid psychophysical dualism one may say that these thoughts are molecular movements, if one wish, but the fact remains that they have a characteristic which differentiates them from all other movements and which therefore erects a barrier around them and delimits them as a special class. Whereupon your dualism is as good as back again. For what makes these movements of interest to philosophy and psychology is not what they have in common with other movements, but what they do not have in common.

There are then according to Mr. Lewis two kinds of meaning corresponding to esthesis and knowledge, i.e., "the direct non-sharable meaning of reference to some complex of sense-qualities," and "the logical, sharable meaning of further conceptual relations." His theory is largely a polemic, and a justified one in the opinion of the writer of this paper, against founding the one kind of meaning upon the other. He further distinguishes two aspects of logical meaning, (a) its apriority, (b) its intersubjectivity. Its apriority is evidenced by what amounts to man's ability to handle propositional functions; its intersubjectivity is evidenced by the identity between various individuals' behavior including the use of language. But though propositional functions assert nothing about nature, nevertheless the relations symbolized in them are duplicates of, or generalizations from, or contradictions of relations met with in our daily life. Otherwise no implications could be drawn from them whatsoever. We could deduce from the propositional function "$x > y$," the

[6] For the identity of speech and behavior, see esp. pp. 109ff, 84, 87, 102.

conclusion that "$y < x$." "But we could deduce nothing from the propositional function "x O y" until we know what is popularly called the "meaning" of O. Nor, as psychologists pointed out hundreds of years ago, could we give O a meaning which had no similarity to or definable difference from some experienced type of relation.[7]

As for intersubjectivity, it is true that we should have no ideas of or symbols for common meanings if there were no common behavior. Similarly there is not much point in discussing theories which have no applicability to behavior, for there would be no telling whether they were true or false and hence they would be meaningless. But it is needless to point out to a logician, least of all to Mr. Lewis, that "p implies q" does not necessarily assert p of the natural world. It may be said that the system which is applicable is no different formally from the queer systems. That may be granted. But in that case its meaning is nil as far as human behavior is concerned. If its meaning is acquired, however, from abstraction of common properties, then it can not be *a priori* except in the sense that a child is logically prior to a parent. In other words one first derives it from experience, organizes it, makes it conform to experience and then calls it logically prior to experience. How does it differ from the *a posteriori*? Only in the degree of analysis and organization. This I recognize as a naïve and perhaps vulgar comment. But philosophy at certain stages of its history has benefited rather than suffered from contact with naïveté and vulgar sense.

If we now turn back to Mr. Lewis's three theses we find that first *a priori* truth is definitive in nature and rises exclusively from the analysis of concepts. But since concepts are uniform ways of behavior, *a priori* truth arises exclusively from our ways of behavior. But what guides us in our analysis we are not told. We find, second, that the application of any particular concept to a particular given experience is hypothetical. But if it is an abstraction of what experience has in common with other experiences, its application ought to be assured in advance and empirical truth as certain as any other, if we apply the right system of concepts. We find, third, that the fact that experience in general is such as to be capable of conceptual interpretation requires no peculiar and metaphysical assumption about the conformity of experience to the mind or its categories; it could not conceivably be otherwise. This is irrefutable if conceptual interpretation is an abstraction of observed uniformities of behavior or experience; for then experience conforms to the mind since the mind conforms to experience. But if that be true, then the "*a priori*" is simply a name for highly analyzed and systematized empirical generalizations. It is too perfect to apply rigidly to experience, but that turns out to be of no moment. Why does it need a special name?

[7] Of course these remarks are stupid if man can not think.

MR. LEWIS AND THE *A PRIORI*

Arthur E. Murphy. "Mr. Lewis and the *A Priori*." *Journal of Philosophy* 29.7 (31 March 1932): 169–181.

It is my purpose in this paper to criticize and, so far as may be, to disprove a theory about the nature of knowledge, and of *a priori* knowledge concerning physical reality in particular, which appears to be one that Mr. Lewis defends in *Mind and the World Order*. I say "appears" advisedly, since it is quite plain that he does not always maintain it; indeed, as I shall later try to show, he provides us in this same book with all the materials necessary for its refutation. And some of my colleagues have argued that he never "really" holds it at all, but only seems to do so through the use of a terminology whose associations are, to say the least, misleading.

Whether or not this is in fact the case I am quite unable to say. At any rate, the view in question is widely current among us, and has gained considerable aid and comfort from a not implausible interpretation of Mr. Lewis's statements about the *a priori*. To isolate this to my mind objectionable view, and to show that it is flagrantly inconsistent not only with sound doctrine on the subject, but with the excellently sound doctrine which Mr. Lewis himself lays down elsewhere in this same book, may serve in a measure to clarify this important problem.

The theory in question I will call the "dialectical" theory of truth, or the theory of truth as dialectical. And I shall limit myself to a discussion of the rôle of such dialectical truth in our knowledge of the external world – what Kant would have called the phenomenal world – as contrasted with pure experience on the one hand and with pure concepts on the other. According to this "dialectical" theory, the truth about the external world, such truth for example as physics claims to afford, is determined in part by the interpretative attitude of "the mind." In its simplest form this seems to mean (*a*) that the truth about physical objects depends on what we mean by them – on the way in which we "freely" interpret the data of experience, (*b*) that this interpretation is addressed merely to ourselves and hence needs no external support, and (*c*) that it can be maintained *as knowledge of physical reality* no matter what experience may be, not because it is able to delimit experience in advance, but precisely because it does not claim to do so. Being equally compatible with any empirical alternative, it can be held no matter what the subsequent course of events may reveal. This amounts to saying that there is a truth about physical reality which depends

simply upon the way we interpret it, and that in respect of this truth – though, of course, of no other – the mind legislates for reality. This is the view that I shall criticize, and it is one that Mr. Lewis appears sometimes to defend. Since in fairness to its defenders we should see it at its best, I propose to let it speak in terms of those aspects of his theory which seem to support it.

The basis for the view is found in a situation with which Mr. Lewis deals at length. The truth or falsity of a judgment is plainly indeterminate apart from a specification of its objective, of what it is about. And recent doctrines about the relativity of knowledge in various fields have brought us to see that it is not as easy as men had previously supposed to know what one is talking about. The term "reality," for example, has "a curious complexity." For "the adjective 'real' is systematically ambiguous and can have a single meaning only in a special sense. The ascription of reality to the content of any particular experience is always elliptical: some qualification – material reality, psychic reality, mathematical reality, is always understood. And whatever is real in one such sense will be unreal in others. Conversely, every given content of experience is a reality of one sort or other; so that the problem of distinguishing real from unreal, the principles of which metaphysics seeks to formulate, is always a problem of right understanding, of referring the given experience to its proper category" (page 11).[1]

I have quoted this passage at length because I think it crucial for much that is to follow. So long as one believes, as some of our contemporaries still do, that there is just *one* "right" meaning for reality the question as to what we are talking about in judgments about reality does not arise. We *must* be talking about the Absolute, or the feeling of feelings, or the motion of electrons, even when we *seem* to have something quite different in mind. Once realized, however, that the term requires further specification, and it becomes evident that *apart from such specification* the truth is simply indeterminate. Is "finite mind" real? Is it real in what sense? *It all depends on what you mean by "real,"* on how you interpret this term. And this interpretation, clearly, is the work of the mind.

Evidently the recognition of plural reference, of systematic ambiguity in the categories of thought apart from some further context of relatedness, does raise the problem of meaning, of interpretation, in a unique form. And since I wholly agree with Mr. Lewis in the belief that most descriptive terms, from "length" to "reality," do possess such systematic ambiguity in their ordinary philosophical usage, I welcome the inquiry into the implications of the specification of meanings which it seems so urgently to require.

There is, then, a sense in which whether a judgment is *true* depends upon what the judgment *is* – i.e., on what it means. Is a given object three feet long?

[1] All page references are to *Mind and the World Order*, New York, 1929. All italics in quotations are in the text itself.

It depends on what you mean by "three feet," and because no one measure-system is in itself *the* correct one, it follows that "the mind" must choose between these various meanings in order to specify a determinate object of judgment. Apart from such choice of reference the judgment that "this object is three feet long" is neither true nor false, but simply indefinite. This is the point of departure for theories that take relativity seriously in their account of knowledge. We shall return to it in the sequel.

We are now to apply this general analysis to the status of "the datum" in knowledge. There is a brute fact element in experience, something not merely given but coercively given, which so far as it goes is authoritative in knowledge as nothing else can be. Mr. Lewis is emphatic on this point. But it is equally the case that this "given" is not in itself completely coercive in most of our judgments about the natural world, i.e., whenever we are judging about the sort of reality that is more than mere qualitative content. Being as such equally compatible with different hypotheses about physical objects, it does not force us to accept any one alternative rather than another. It follows that so far as the datum goes the mind is in a measure "free" in its interpretations of any objects other than data, to which it may refer. An interpretation which might have been different for exactly the same given experience is made on some other ground than mere givenness; it is "freely" taken, and, if we divide knowledge into the datum and the work of the mind, falls in the latter rather than in the former division.

This at times seems to be precisely Mr. Lewis's view of the matter. For "The two elements to be distinguished in knowledge are the concept, which is the product of the activity of the thought, and the sensuously given, which is independent of such activity" (p. 37). The datum is that to which thought must conform since "If there were no datum given to the mind then knowledge must be contentless and arbitrary; there would be nothing which it must be true to" (p. 39); and in matters of interpretation the mind is not wholly determined by the datum: "In such problems (of interpretation) the mind finds itself uncompelled save by its own purposes and needs. What is fixed datum and must be conformed to is only that welter of the given in which not even the distinction between real and unreal has yet been made. The rest is completely and exclusively our problem of interpretation" (p. 265).

Now what about this interpretation itself? That it transcends the given we have seen. But it refers, nominally at least, to a reality other than the given, which it pretends to qualify. Is it not objectively determined, so far as it claims to be true, by its relation to this further object? Can we explain the truth of judgments about physical objects by referring to the fact that "the datum" does not fully specify their nature, and that, as a consequence, we are not completely determined by *it* in our judgment *of them*?

Mr. Lewis answers with the following decisive statement. "That only can be a priori which is true *no matter what.* What is anticipated is not the given

but our attitude toward it; it formulates an uncompelled initiative of mind, our categorical ways of acting. Truth which is a priori anticipates the character of the *real*: otherwise it would possess no significance whatever. The real, however, is not the given as such, but the given categorically interpreted. In determining its own interpretations – and only so – the mind legislates for reality no matter what future experience may bring" (p. 197).

The truth about our interpretations is free and can be determined in advance of experience. It is, hence, "*a priori*," because it is addressed to ourselves, not to subsequent experience. Thus "Knowledge of such a priori principles requires only reflective self-consciousness, because it is simply knowledge of those criteria which we apply in classifying experience in one or another fashion, interpreting it in one or another way. A categorical interpretation ... does not preclude any imaginable or unimaginable content of experience in the future, but only precludes our interpreting it in a fashion contrary to our predetermined attitude or bent" (pp. 227–228). It is obvious, consequently, that "definition, classification and inference represent no operation in the world of things, but only our categorical attitudes of mind" (p. 247). And finally, "The a priori does not dictate to nature but concerns our interpretation of empirical facts" (pp. 304).

The position, so far, seems straightforward. The truth of an interpretation can be independent of the datum because it is not about the datum. It can be independent of the future course of experience because it makes no statement about that experience. Nor does it "dictate to nature," but is simply addressed to ourselves. So far so good.

Yet the *a priori* is supposed to provide us some knowledge about physical reality. As Mr. Lewis is later to argue, it is because we can be certain *a priori* of some such principles that in our study of physical reality we have "a basal minimum of law." How can the mind thus legislate for reality by means of commands addressed *to itself*? This is the paradox that still requires explanation. The answer is that our legislation is merely definitive, explicative, it concerns the meanings we put upon experience, and meanings are preëminently "of the mind." To say that "all men are mortal," if it is taken as explicating the *meaning* of the term "man," does not legislate out of existence any possible reality since an immortal man is by definition not possible. And that definition is of our own making. "Not only is the meaning assigned to words more or less a matter of choice – that consideration is relatively trivial, – but the manner in which the precise classifications which definition embodies shall be affected, is something not dictated by experience. If experience were other than it is, the definition and its corresponding classification might be inconvenient, useless or fantastic, but it could not be false. Mind makes classifications and determines meanings; in so doing it creates that truth without which there could be no other truth" (p. 240).

This statement confers really surprising privileges upon a definition. On the one hand, as a mere definition, it "cannot be false"; on the other, equally as a definition, it "creates truth." How both of these assertions can be true at once is a further question; but that they must both be true, that a definition is *at once* merely addressed to ourselves, as a way in which *we* classify things, *and also* legislates for the things in question, is the curious conclusion to which we are driven.

The justification for it is discovered not in a new analysis of *reality*, but only in a renewed reference to the indeterminate character of given experience. We can maintain these definitive laws as legislation for reality, because given experience can never disprove them. "The a priori as thus definitive or explicative, representing principles of order and criteria of reality ... is a truth about our own interpretative attitude ... imposes no limitation upon the future possibilities of experience" (p. 231). And this because "The proposition that is a priori does *not* assert any limitation of experience; it only asserts that whatever lacks some essential property, *X*, is not to be classified under some concept, *A*" (p. 303).

The legislation of mind is "free," moreover, in this final sense that it "has alternatives," and this is the very mark and sign of its dominion. "What is a priori does not compel the mind's acceptance. It is the given experience, the brute-fact element in knowledge, which the mind must accept willy-nilly. The a priori represents the activity of mind itself; it represents an attitude in some sense freely taken. That we elicit some formula as a principle means that we take it as forbidding something ... which in some sense has significance. That which is incapable of any alternative is utterly devoid of meaning. The necessity of the *a priori* is its character as legislative act. It represents a constraint imposed by the mind, not a constraint imposed upon the mind by something else" (pp. 196–197). And, most conclusively, "the a priori principle which is definitive, and not a material truth of the content of experience, *has alternatives*" (p. 232).

We have now before us a complete conspectus of this dialectical theory of truth. The mind legislates for reality because there is a kind of truth about the external world which is at *once* a matter of definition, neither true nor false, *and also* prescribes the nature of the objects that are to exemplify it. This truth can be maintained independently of experience because an experience could only refute it in case it provided a relevant instance; while the decision as to whether or not it is a relevant instance is itself a mental interpretation, a choice freely made. And this choice is properly called legislative because there were possible alternatives which the mind might have adopted instead; it is the result of our active initiative.

And as we have seen there are passages in *Mind and the World Order* which seem to support this theory. I maintain that it is invalid from beginning to end. I should hesitate to make such an assertion on my own authority; fortunately

that is not necessary. Mr. Lewis has himself contradicted its principal theses definitely and in detail, and it is to the weight of his judgment that I shall appeal throughout, in attempting to show (1) that "the mind" is not "free" or legislative with respect to the truth of any judgment about objects; (2) that the "interpretative principles" of mind, so far as they claim to be about physical reality at all, are not simply addressed to ourselves and hence their truth is *not* "created by mind"; and finally (3) that all given experience falls under one category or another quite independently of how we interpret it, that in so far as it is thus categorized it is limited by a generalization that refers to it, and that to the assumption that this limitation exists there is, on Mr. Lewis's own showing, no alternative whatever.

1. It is true that in its judgments about physical reality the mind is uncompelled by the datum *as such*. But that is simply because in all such cases the datum as such is not the object about which it is judging. The minimum object of knowledge, so far as Mr. Lewis is concerned, is the datum – or quale – in determinate relationships to other actual or possible experiences. "What is essential for understanding and for communication is not the quale as such, but that pattern of its stable relations in experience which is what is implicitly predicated when it is taken as a sign of an objective property" (pp. 124–125). Moreover, it is not about the datum even as standing in certain relations, that objective judgments are possible. "Whatever the uniformity of reality required for knowledge may mean, it *cannot* mean a fixed and uniform sequence in which the given experience is one complete term" (p. 358).

Now if the datum as such is not the subject of my judgment it is not merely true but a truism that it does not in itself determine the truth of that judgment – for the judgment is about something else. I am also not "compelled" in my estimate of Mr. Hoover's administration by the present output of textbooks on anthropology, since the state of the book trade in this particular is not conclusive one way or another on the point at issue. Why should it have seemed important, then, to emphasize this not very recondite point?

Precisely because on the dialectical theory it is assumed that if I am free so far as the datum is concerned I am free altogether. "The rest is purely and simply my problem of interpretation." But quite emphatically it is not. For to classify the datum as an instance of a certain concept is to predict of it that it will stand in discoverable relations to other experiences, such that *if* I follow up my present hypothesis the results anticipated will occur. "Thus the classification of what is presented and the predicted relationship of it with further experience is *one and the same thing*. This implicit prediction is at once a general principle and our concept of the object" (p. 134).

Further, "The ascription of reality is, then, the affirmation of possibility, and the kind of reality ascribed conforms to the nature of the possibility affirmed" (p. 183). If we now recall that it was in classifying the datum as

reality of one or another sort that the mind was said to be "legislative," the following statement is simply crushing as against the "dialectical" view. "The 'if' here [in the if-then propositions which *are* our 'interpretation' of the object] depends upon our own active nature for its meaning, as has been pointed out, but the content of the 'then' clause, and the truth of the proposition as a whole, are things with respect to which the knowing mind is not dictator but dictated to. I may confront the given with different attitudes and purposes; I may proceed into the future in different ways. But *what I should then find*; what eventuation of experience is genuinely possible; that is something independent of any purpose or attitude of mine. These I seek correctly to anticipate in my present interpretation of the given. If they do not obtain in reality, my present "knowledge" is false. Whether they obtain or not, is determined independently of my mind. If not, then it is not determined at all, and knowledge and error are, both of them, purely subjective and meaningless" (p. 193). These relations, these possibilities of experiences, are what our concept of the object is about, and we now see that there is nothing more clearly independent of any attitude or legislative act of our own.

2. The dialecticians will next object, no doubt, that while this holds good of empirical connections, it does not hold for those that are definitive and hence, like any definition, neither true nor false. Now there is a sense in which a declaration about our intentions as to the use of words is neither true nor false, but that is not the meaning of definition that is relevant here. For the dialectician must hold that definition is *at once* only such a declaration of intention *and also* a prescriptive law for physical reality. Mr. Lewis tells us that "*all* definition and *all* concepts exercise this function of prescribing fundamental law to whatever they denote, because everything that has a name is to be identified with certainty only over some stretch of time. The definition provides criteria of the thing defined which, in application, become necessary and essential laws of its behavior" (p. 257). So a definition can "correspond to a natural cleavage" and be "correlated with important uniformities of behavior," which a command addressed merely to ourselves could hardly do. And so, although he has once told us that "the a priori does not dictate to nature" (p. 304), Mr. Lewis later states that "as the matter is usually conceived, this knowledge which we find to be a priori would be included in what is meant by "knowledge of nature," since it delimits, for example, the physical and prescribes basic laws which must be true of all physical reality" (p. 311). And so far is Mr. Lewis from rejecting the "usual conception" that he finds in this *a priori* delimitation of the physical a "basal minimum of law"(p. 322) on which the natural sciences can depend.

If a definition is *merely* a declaration of intention as to what *we* will do, it does not provide certain knowledge of physical objects, since it is, as such, neither true nor false. If it does "provide necessary and essential laws," then

we must accept the responsibility of inquiring whether "natural cleavages" will or will not sustain them. It is only by holding both that a definition "cannot be false" and also that it "creates truth" that the dialectician can maintain his position.

3. There is still the consideration that "the *a priori*" is free with respect to experience, since experience can not refute it, and hence, whatever the "independent reality" may be, it is always possible *in experience* to retain an attitude freely taken. This contention rests, however, on a really shocking ambiguity in the use of the term "experience," and one which Mr. Lewis himself renders peculiarly vulnerable. Of course *bare* experience can not refute any generalization, since it does not as such provide a relevant instance. "*This*" can not disprove the assertion that "all men are mortal" unless "this" is a man. And it is always open to me to hold that "this" is not a man. Nay, more, if "this" means the bare datum as such, I can say most positively that this is *not* a man, since, as Mr. Lewis has shown, the datum as such is *never* the subject of generalizations of this sort. Experience is then not "limited" by my interpretations, since experience is not the subject to which they refer. So far as they are concerned, anything in the way of future experience is possible. "The *a priori* imposes no limitation upon the future possibilities of experience" (p. 231). And again: "They [our interpretative attitudes] dictate nothing as to the content of experience and no experience can conceivably prove them invalid" (p. 266).

But this is not the way Mr. Lewis usually writes of experience. "The possession of the concept or meaning is utterly irrelevant to any experience whatever, unless we could – with sufficient time and attention at least – say whether certain eventualities of experience would or would not be compatible with its application" (p. 286). Now if the *a priori* imposes no limitation on future experience then the whole distinction between what is and what is not compatible with it becomes simply meaningless, and the *a priori*, failing to provide a test of such compatibility, becomes "utterly irrelevant to any experience whatever." Yet Mr. Lewis rightly holds that *a priori* concepts are not thus irrelevant, but rather, like purposes, "must take their shape and have their realization in terms of experience; the content of the given is not irrelevant to them" (p. 24).

In another place he speaks of "the given" as excluding certain interpretations, on the ground, presumably, that the interpretation is incompatible with them. "I can apprehend this thing as pen or rubber or cylinder, but I can not, by taking thought, discover it as paper or soft or cubical" (p. 52). Yet surely, being or not being paper is no part of the brute "quale" as such. Again we read that "The qualia of the given are the clue to the applicability or inapplicability of concepts, and set the limits of conceptual interpretation" (p. 157). How this could be unless experience itself could contradict certain hypotheses, it is difficult to understand.

Hence if we treat of experience *as categorized,* not in its mere qualitative indeterminacy, we must hold of it that it *is* limited by the *a priori.* And Mr. Lewis does hold exactly that. "When we study the sciences of physical reality, we have this *priori* knowledge of principles to which the given must conform if it fall within the class of those phenomena which are significant in this connection. Thus we are provided, a priori, with a basal minimum of law within the field, as a sort of Archimedean point for all investigation" (p. 322).

But suppose the given does *not* fall within the class of such phenomena? This, too, is a matter of discovery, not of mental legislation. Even though we rule it out as unreal, we are still conforming to *its* nature. For "to be able to classify what is presented as 'unreal' or 'illusion', though it may represent only superficial understanding, means nevertheless a very important understanding, precisely because it means that this context of experience is not relevant in the present connection, that it can not figure as a negative instance of an empirical generalization and so on" (p. 350).

Moreover, whatever in experience does not fall within *this* class, does fall within some other, and is hence limited in its own appropriate category. "Nothing is real in all categories; everything is real in some categories" (pp. 321–322). "What is not reality of one sort is reality of another; what we do not understand in one way we shall understand in another" (p. 225). And most emphatically, "every given content of experience is a reality of some sort or other" (p. 11).

We conclude, then, that every experience is limited in the categories under which it falls, that every given experience falls under some categories, and that whether or not it falls under a particular one is a question of objective relevance or irrelevance. Its nature in each case is perfectly determinate, and in no case is the mind free to legislate for it in its appropriate categories, or to discover it as other than it independently and determinately is.

Finally, the fact that there should be such limitation of experience is something absolutely inescapable, and something itself not made by mind. For there is no possible alternative. If experience were not limited in *some* fashion it would be simply inconceivable. "Since what any substantive concept denotes in experience is some definite sequence or set of such, there could be, in an experience that was subject to no limitation upon the all-possible sequence of given presentations, no recognition of things by their appearances as even probable" (pp. 370–371).

It is true that Mr. Lewis describes this requirement that experience should be limited in its possibilities as not itself a "limitation on experience" in precisely the opposite sense to that in which he formerly used the term. It is no doubt true that in eliminating from the world the impossible we are not eliminating anything possible. But the decision as to what is possible and what is not is here most rigidly fixed. On the other hand, "The a priori is a peculiar possession of mind because it bears the stamp of mind's creation. And the

criterion of creativity is not inevitability but precisely its opposite, the absence of impulsion and the presence of at least conceivable alternatives" (p. 213). Hence in the necessary limitation of the possibilities of experience we are dealing preëminently with that which is *not* the creative work of the mind, because there are no conceivable alternatives. I do not for a moment contend that Mr. Lewis actually means to hold that the denial of limitation with which he has ended – the absence of conceivable alternatives – is identical with the denial of limitation with which he began – the presence of conceivable alternatives. But I do hold that only when the two are identified – when we equate what the mind can not help thinking about an ordered world with what it "freely" elects to take as its own classification of the data of experience – does the dialectical theory of truth become even apparently plausible. And it is for that reason, among others, that the theory seems to me untenable.

I conclude therefore that no statements that truly prescribe laws to physical reality are made true by the decision as to how we shall classify the data of experience. The only statements in fact that are made true by our decision to mean one thing rather than another are those which assert that such in fact is what we have decided to mean by them. In all its knowledge – *a priori* or other – the mind intends to follow the nature of its subject-matter, not to legislate for it. "I am coerced only by my need to understand." True enough, but that is the most rigorous coercion of all. "For the purpose of knowledge is to be true to something that is beyond it. Its interest is to be governed and dictated to in certain respects. It is a real act with a real purpose because it seeks something which it knows it may miss. If knowledge had no condition independent of the knowing act, would this be so?" (pp. 191–192). And clearly it is not just the datum that here "dictates" to knowledge, for the datum, as infallibly given, is not something that we may miss and, moreover, our awareness of it is, for Mr. Lewis, not knowledge at all. It is the object of our interpretation that "governs" here, and if the mind is "free" with respect to it, it must be because, in Rousseauistic terms, it is forced to be free. The most thorough-going realism could not ask for a more decisive statement.

Yet it is not wholly satisfactory simply to oppose one theory by its contradictory in this somewhat abrupt fashion. A really adequate criticism must account for the mistake in question – if such it be – and exhibit it as a partial, though quite inadequate, expression of the truth. For, as Spinoza said, "just as light shows itself and darkness also, so truth is a standard of itself and falsity" *(Ethics*, Bk. II, prop. XLIII, note). It is the outstanding merit of this second view, which Mr. Lewis so emphatically holds, that it can give such an account of the dialectical theory from which its own results diverge so sharply. An exposition of this point will constitute our final evidence in its favor.

The plausibility of the dialectical theory rests throughout on a mistake about the relativity of knowledge which Mr. Lewis exposes with admirable clarity.

It is perfectly true, as has been seen, that where a term – such as "reality" for example – is systematically ambiguous, a specification of meaning is required before statements that concern "the real" can become determinately true or false. This is true, of course, not because the term refers to no object, but because it may refer to any one of many and the selection of the one in question is essential for unequivocal reference. The determination of such reference does not make a proposition true; it is its object that does that. But it does indicate that object and hence bring us to the position where the proposition may be *either* true *or* false. To confuse this resolution of ambiguity with the creation of truth is a subtle and fashionable mistake, but one that needs special criticism for that very reason.

Thus when the skeptics of our own day observe sapiently of the truth of any proposition that "it all depends on what you mean" the appropriate retort is simply "Well, what *do* you mean?" Apart from specification of this sort the truth of the proposition can not be determined because it is as yet no definite proposition at all. To linger among these deliciously indeterminate half-lights of possible interpretation, to transform the need of reaching a decision about meanings into an apology for never doing so – this is dialectic in its most modern dress, the last resource in philosophy of that variety of literary loose talk to which some of the disciples of Santayana seem so fatally addicted.

But once meaning *is* specified the determinate truth or falsity of the proposition depends on what? – why, on the nature of its object, of course. The determination of meaning can only bring the proposition to the status of being *either* true *or* false – it can not decide between these alternatives. So exactly Mr. Lewis has made the point in the case of another instance of relativity – that of motion. One must specify which among possible reference systems one has in mind before one's assertion about the motion of an object can have a definite meaning. "That is, there are certain properties of the object, as an independent reality, which can only be described in terms of some observer or frame of motion. But specify this relationship and the true description is thereby fixed. What is it that determines this? It can not be the relative motion already specified. It is fixed by the objective real character of the thing" (p.185).

So of experience. It has many possible connections, hence many meanings. No one of these – as opposed to any other – is exclusively prescribed for our attention by the nature of the "datum as such." To select those relations which we mean to emphasize is a work for mind, and a vital one. In this sense, as Mr. Lewis observes, "A large part of the scientific search is, thus, for *things worth naming*" (p. 258). But once this selection is made, the truth depends on what we are talking about, on the object to which a proposition actually refers. It is the independent nature of the object, *thus specified*, that "creates truth" about it.

And thus to imagine that because we must know what we are talking about we are thereby absolved from the necessity of conforming to its nature, is a sheer *non sequitur*. It is parodied by Mr. Lewis in another connection in the following terms: "The size of Caesar's toga is relative to the yardstick or to some other standard of measure. No size without a yardstick. The size of things is through and through yardstickian. To be sure the fallible yardstick in my hand may not determine size in general, but the yardstick in the Bureau of Standards determines both my yardstick and all sizes that there are. It creates size" (p. 189). If the reader will compare this statement with one previously considered: "Mind makes classifications and determines meanings; in so doing it creates that truth without which there could be no truth" (p. 240), he will see that this latter assertion simply can not support the interpretation which a "dialectical" theory would put upon it.

It was Bacon, I think, who said that a little philosophy turns men from religion: but a deeper philosophy brings them back to it. So we might say of "relativism" in the theory of knowledge, that a little of it appears to discredit realism, but a more accurate account of it justifies an objectivity for knowledge more precise and more thoroughgoing than could previously have been claimed. Mr. Lewis's view of the relativity of knowledge is our best evidence that this second stage in the development has actually been achieved.

LOGICAL POSITIVISM AND PROFESSOR LEWIS

James B. Pratt. "Logical Positivism and Professor Lewis." *Journal of Philosophy* 31.26 (20 December 1934): 701–710.

In their work on *The Meaning of Meaning* Ogden and Richards cite some eighteen definitions of the word, most of which are obviously unsatisfactory, adding one of their own which many of their readers consider no better than it should be. Miss Calkins, in one of her last articles,[1] distinguishes seven uses of "meaning," and comes to the conclusion that the word is so ambiguous that it had better be systematically avoided. One can understand the reasons for this advice. Yet if philosophers should follow it they would find themselves falling back upon some synonym or partial synonym; for the meaning of "meaning" is so crucial that it can not be avoided. The purpose of this paper is not to add a new definition to this slippery and unreplaceable word, but merely to point out one aspect of meaning which the work of the logical positivists has brought to the fore, and which has bearings of some importance upon certain questions not only of logic but of metaphysics.

For, as all readers of this paper will know, the logical positivists are convinced that many of the traditional problems of metaphysics can be solved in the sense of being shelved by the *Konstitutionssystem*; and the method by which this solution is brought about consists in showing that the problems in question are, in the last analysis, without meaning. There are two kinds of assertions, we are told, in the official declaration of the Vienna Circle; to one of these belong strictly scientific views and conclusions; the other kind, such as most metaphysical positions, prove to be entirely meaningless. "The metaphysicians and theologians, failing to understand themselves, believe that they are saying something with their assertions. Analysis shows, however, that these assertions say nothing at all but are merely expressions of life-feelings."[2]

I can not find in the writings of the logical positivists a statement of the nature of meaning which seems to be intended as a complete summary of their doctrine, but we shall hardly be far wrong if we put together the essence of

[1] In the *Am. Jour. of Psychol.*, Vol. XXXIX, pp. 7–22.

[2] *Wissenschaftliche Weltauffassung der Wiener Kreis*, p. 16.

their treatment of this question, especially as found in Carnap's *Logische Aufbau der Welt*, in some such way as this: The touchstone for testing the meaning of any proposition is to be found in the question, Is the proposition verifiable in terms and relations of the most elementary sort (after the most complete analysis) within the private experience of the individual? I have here put into one sentence three separate (though related) tests of meaning, each of which receives great emphasis by Carnap and his followers. Having put them together for the moment let us now consider them separately. A proposition to have meaning (1) must be reducible to the most elementary terms that analysis can find, (2) must be reducible to the elementary terms of first-person experience, (3) and must be verifiable in these terms.

The first of these three tests is obviously fundamental to the whole conception of the *Konstitutionssystem*. As applied by Carnap it usually seems to identify the ultimate and unanalyzable psychic atoms with sense qualities. Whether this identification is intended as complete or not, at any rate it is plain that the theory stands by the view which identifies an object or experience with its parts. Against the common idealistic belief (which is Aristotelian as well as Platonic) that parts get their character from wholes, the position of the logical positivists interprets wholes entirely by the parts into which analysis transforms them. In this respect logical positivism would seem to be closely related to structural psychology and to have a good deal in common with old-fashioned associationism. Analysis has succeeded in reducing the consciousness of meaning in the subject-object relation and the experience of activity to sensational elements; but one wonders whether in so doing it has not poured out the baby with the bath. It is not my purpose here to argue this matter, but merely to point out that the denial of meaning to all assertions concerning the less sensuous experiences of the human mind until they can be reduced to and replaced by assertions concerning simple psychical elements is something which requires larger discussion than it receives in the *Logische Aufbau der Welt*. Some readers may feel that there is something almost naïve in Carnap's dogmatic confidence in analysis.

It is the second and third tests of meaning in which I am particularly interested. For Carnap the primacy in knowledge and meaning of what he calls the *eigenpsychische*, the conscious content of the individual, is fundamental. From it the meaning of physical objects is derived, and only through physical objects (the bodies of other persons) is the meaning and knowledge of other people's psychic states – the *fremd psychische* – derivable.[3] *The Konstitutionssystem* has thus what Carnap calls a "*solipsistische Basis*." There is excellent justification for this as a starting point for any attempt to put meaning into science and philosophy. No assertion can have meaning for

[3] *Der Logische Aufbau*, section 58.

anyone the terms of which are not interpretable by him in terms of his own experience. In the application, however, of this admirable pragmatic principle there are certain difficulties, notably the question how with this principle one can avoid subjectivity. Science, as the Vienna school insist, is a *Kollektivarbeit*,[4] and demands objectivity. The reality which it studies, in contrast to dreams and illusions, must possess "*Intersubjektivität*" and "*Gültigkeit für die anderen Subjekte.*"[5] All this is not only admitted but stressed by Carnap. The solution which he gives to the problem reads thus: "The material of the individual streams of consciousness is indeed entirely different, but certain structural characteristics are common to all. Science must restrict itself to assertions concerning these structural characters if it is to be objective."[6]

That science must deal with structure and relations rather than with the purely subjective in its intimate privacy is an important and helpful insight. But that this insight can get us out of the subjectivity with which we start – our "*solipsistische Basis*" – it is impossible for me to see. Before one can put meaning into the assertion that different streams of consciousness can have identical structures, one must have put meaning into the conception of different streams of consciousness. The central problem of the meaning of the *fremd psychische* is thus, so far, untouched. Nor are we in any wise aided in its solution by the fact, upon which much stress is laid, that one reason for believing in the existence of other psychic streams than our own is to be found in our perception of other people's physical bodies and their behavior. This is true; but before we are to believe in other conscious centers than our own we must know what we mean by them. The most fundamental part of the solution to this problem of deriving the objective from the subjective Carnap gives rather casually in a section of his work which does not purport to deal primarily with this problem: "We *ascribe* to the human bodies which we see psychic processes"; and these psychic processes, thus ascribed, are conceived as *eigenpsychische*.

In other words, Carnap would seem to hold (and in this I should heartily agree with him) that the only way in which the concept of other minds or of an objective world can be given meaning is through the use of the imagination. Here let me explain that I am using the word "imagination" in a sense wide enough to include conception in both its universal and its individual sense. Taken in this inclusive fashion, I hold that the function of imagination in the production of meaning is of primary and crucial importance. The avoidance of metaphysical solipsism, the recognition of society, the *Objektivität*,

[4] *Wissenschaftliche Weltauffassung*, p. 15.

[5] *Logische Aufbau*, Section 66.

[6] *Loc. cit.*

Gültigkeit, *Intersubjektivität* of the physical world, the reality of science as a *Kollektivarbeit*, all are dependent for meaning upon our power of extending our own experiences through the imagination, and attributing some of the qualities which form parts of the content of our awareness to other existences – whether psychical or physical – than our own streams of consciousness. The term "*other streams of experience*" is meaningful to me only because I have experienced my own experience and, within this, have experienced what I know as otherness, and through these experiences am able to imagine or conceive another experience which is not mine. I am thus able to conceive what I do not directly experience. Unless I could do that, not only all knowledge, but all meaning, would be unthinkable.

It is quite likely that Carnap would assent to what I have said. But it would be possible to interpret some of his passages in the sense that all physical objects and all other minds, if they are to have meaning for me, must be envisaged as parts of my own first-person private experience, my *eigenpsychische*. It is no part of my purpose, however, to give a complete exposition of Carnap's view; I shall therefore leave the matter with the repeated insistence that (private) experience plus imagination is amply able to put meaning into assertions concerning things outside of our psychic content; and that without imagination all thought *about* anything would be impossible.

The third test of meaning which Carnap seems to insist upon (I confess I am not fully certain how his words should be interpreted) is the possibility of verification. Nowhere, so far as I recall, do any of the logical positivists specifically state that the unverifiable is meaningless, but it is implied in many of the positions which they adopt. This, in fact, would seem to be the chief reason why metaphysical positions of various sorts are considered meaningless. It may be that in attributing this position to Carnap I am doing him injustice; but whether he would make verifiability a criterion of the meaningful, the identification is worth consideration on its own merits. And certainly there are passages in Carnap's book which look in this direction. A specific example of the kind of statement I have in mind is Carnap's definite assertion, "*es gibt kein Fremdpsychisches ohne Leib*," – there is no psychical existent outside of my own consciousness without body.[7] The reason for this assertion is stated as follows: "*Fremdpsychisches* can be constructed (*konstituiert*) only through the means of a body in which expressive processes take place which are like those of my body; or, in realistic terms, *Fremdpsychisches* which was not bound to a body through which it got itself expressed would be fundamentally unknowable (*unerkennbar*), and therefore could not become the object of scientific assertions."[8] There is no doubt that this

[7] *Op. cit.*, Section 140.

[8] *Loc. cit.*

proposition is in part true; but the truth in it is the fact that the normal and usual mode of verifying a belief in the *Fremdpsychische* is through the appearance and activity of a living body. This, however, is not what Carnap means. The whole method used by logical positivism for the exclusion of various "metaphysical" assertions consists, not in an appeal to empirical evidence, but in an attempt to show that the assertion under criticism is finally meaningless. The argument here used to show that there can be no *Fremdpsychische* without body is, therefore, an attempt to show that there could be no meaning in the conception of a discarnate consciousness. Such a form of consciousness, it is said, can not be because it would be "fundamentally unknowable." *Knowable* or *verifiable* is thus used as synonymous with *meaningful.*

It would require, I think, no great amount of argument to show that such a use of meaningful would make nonsense of most of our intellectual processes. Verifiability surely presupposes that there is some concept with a meaning to be verified. When you assert, "I am not sure whether a given assertion is true," you must know what the assertion means or you are not saying anything at all. It would not be difficult, moreover, to suggest a number of cases in which we discuss with each other unverified and even unverifiable propositions. Take the very example involved in the sentences quoted from Carnap – the existence of discarnate streams of consciousness. Many students of "psychical research" assure us that such disembodied minds exist. The evidence, they tell us, indicates the reality of such minds as the most probable cause of responses and events otherwise incapable of explanation. You, let us say, are not persuaded, and insist that the evidence is not sufficient to justify the conclusion that there are discarnate minds. But you can say this only because you know what you mean by discarnate minds. We may admit that such minds could not become scientific objects, because not socially verifiable; but to say that is very different indeed from saying that the hypothesis of their existence is meaningless.

For the reasons expressed, therefore, it seems rather plain to me that a metaphysical proposition can not be ruled out as meaningless because it can not be verified within my private experience, nor because it can not be verified by any human experience. Meaning is not identical with verification nor with knowledge: it is presupposed by both. It is not a matter of direct experience but of imagination. By its very nature it involves transcendence of the immediately given. It is an awareness that the immediately given psychic content intends to point beyond itself, to be symbolic of something not itself. All the characters attributed in meaning to this intended and imagined object must, indeed, be drawn ultimately from one's own experience; but with these characters there must go an explicit sense of *otherness.* When imagination of an *other* takes place, there is meaning; without it there is no approximation to anything meaningful.

If the interpretation of meaning which I have been defending be true it is impossible to assert with Carnap that realism and subjective idealism really mean the same thing and do not differ in anything that is significant.[9] Surely the question is not meaningless whether the entire physical universe came into being and all the physical processes began only with the first psychical processes. Nor is there any doubt of the meaning of the assertion that the entire physical world will cease to be when it is no more perceived. Neither the realistic nor the idealistic hypothesis may be verifiable, but we know what we mean by each.

It was with considerable satisfaction that last December in the presidential address at the annual meeting of the Eastern Division of the American Philosophical Association I heard views very similar to those I have here expressed, expounded so much better than I can expound them. I am not sure that Professor Lewis would go the entire distance with me, but he certainly goes a long way. For him as for me imagination is essential to meaning, and ample to produce it.[10] For him as for me transcendence of the immediately given is essential to both knowledge and meaning.[11] For him as for me knowledge and meaning are not identical.[12] To be sure, Professor Lewis seems at times to differ, in words at least, from the doctrine I have presented, in that he asserts that verifiability is a necessary criterion of meaning. Such a position, if intended in its more obvious sense, I could not possibly accept. But as Professor Lewis truthfully says, "just what we can mean by 'empirically verifiable' is really a bit obscure"; and by the time he has finished with the adjective "verifiable "there is not enough left in it to divide him from me. The word, he tells us, is capable of two uses. In one it "connotes the possibility of actually satisfying the conditions of verification." In this sense, we are told, verifiability is essential to knowledge but not to meaning.[13] The other use of the word, which is the one adopted by Professor Lewis, requires no such actual and practical possibility of verification. All that is requisite in the hypothesis which is to have in meaning and therefore be "verifiable" is that it should have an empirical content, that it should "be expressed in terms which genuinely possess denotation."[14] Verifiability in any other sense than this is not necessary for meaning. An hypothesis about the mountains on the other side of the moon which we shall never see, an hypothesis

[9] This seems to be the meaning of Section 176.

[10] "Experience and Meaning" (the presidential address). *Philosophical Review*, Vol. XLIII, pp. 140–141, 144 [this volume, pp. ??].

[11] Pp. 130–132 [this volume, pp. ??].

[12] Pp. 136–139, 142 [this volume, pp. ??].

[13] Pp. 141–142 [this volume, pp. ??].

[14] P. 141 [this volume, pp. ??].

about immortality which "could hardly be verified by science," an hypothesis about the continued existence of the stars after the death of all conscious beings and when all possibility of verification has therefore ceased – these and guesses like these are all "verifiable" in Professor Lewis's sense. "It is entirely meaningful, for example, to think of those inventions which nobody has ever thought of, or those numbers which no one will ever count; we can even frame the concept of those concepts which no one will ever frame. Those who would deny this on logical grounds exhibit a sense for paradox of language which is stronger than their sense of fact. Furthermore, *imagination is sufficient for empirical meaning*, though it requires *perception* for verification. I can imagine that future time which I shall never perceive; and humans can meaningfully think of that future when humanity may have run its cosmic course and all consciousness will have disappeared. It may be that the hypothesis of a reality with no sentience to be affected by it is not a particularly significant issue; though the idealist might have an interest in it for the sake of the light which decision about it would throw upon the nature which reality has now. In any case, the fact that it is unverifiable has no bearing upon its meaningfulness. Whether this hypothesis is true, is a genuine question about the nature of reality."

"When verifiability" is taken in this rather Pickwickian sense I have no quarrel with it as a criterion of meaning; and it would seem that except for words there is no difference between Professor Lewis's doctrine of the meaningful and that maintained by critical realism. Certainly there is nothing in the treatment of meaning to be found in the presidential address which would make the realistic doctrine meaningless. For the realistic schools of today do not assert the reality of a characterless *Ding-an-sich*. Physical reality, they assert, has characters, and we know what we mean by characters because we find characters within our experience. It has spatial and temporal characters, and we know from our own experience what we mean by spatial and temporal characters. It is other than psychical existents and we know what we mean by *other*. Is it meaningless to imagine a space which is not my spatial experience? Is it meaningless to suppose that certain portions of this space are characterized by qualities? It seems to me perfectly possible to imagine this; and if it is so possible, the hypothesis that reality is as imagined is not meaningless. As Professor Lewis himself points out, when we make the realistic hypothesis that there is another side of the moon we need not specify nor image to ourselves what in detail it is like. But we do suppose that it has characters; that it is determinate. "To speak more precisely, our belief includes alternatives which are not determined; but if the thing believed in is what it is believed to be, these alternatives must be determined in the object."[16]

[15] P. 144 [this volume, pp. ??].

[16] Pp. 137–138 [this volume, pp. ??].

Professor Lewis's doctrine of meaning is therefore in no wise inconsistent with representational realism; and he can not consistently reject realism on the ground that it, or its assertions, are any whit less meaningful than are those of his own doctrine. His real objection to realism is based not on the question of meaning, but on the question of knowledge. The difficulty that he finds with realism lies in the realistic view that the object of knowledge may transcend experience in general – i.e., not be itself existentially a part of any stream of consciousness. Transcendence of this sort is, in his opinion, irreconcilable with the possibility of knowing the object.[17] "A relation of experience to what can not be brought within experience is a relation which can not be investigated, and one the very conception of which as cognitive involves a confusion of thought."[18]

Considerable light would have been thrown upon Professor Lewis's criticism if he had told us more explicitly in what this "confusion of thought" lies. The "confusion" can hardly be due to lack of meaning in the realist position, for we have seen that upon Professor Lewis's doctrine realism is quite free from that charge. The alleged confusion is probably to be found in the realist's assertion that objects which are not existentially parts of experience – are not made of experience stuff – can still be known. If this is the case it would seem that the "confusion" is in large part that of Professor Lewis. When the question is raised, How is knowledge possible on the realist's view? it is necessary first of all to consider the meaning of "knowledge." And as everyone knows, the word has the two senses of (1) direct experience, or "acquaintance with," and (2) conceptual knowledge, or "knowledge about." Now if the realist should say that an object which is not existentially within the stream of experience can be directly experienced, can be an object of "acquaintance with," he would obviously be guilty of a confusion of thought, not to say a self-contradiction. But when the realist speaks of our knowledge of external things he is using the word in the sense of conceptual knowledge or knowledge about. No realist claims that we are acquainted with material reality from within.[19] It is not inner nature but relations and structure that are the objects of our knowledge in the physical world.

This being the kind of knowledge which realism claims that we possess, it is hard to see how any confusion of thought is involved. The realistic hypothesis as to the physical has a perfectly definite meaning. How does it differ in principle from our knowledge of other people's experience? Possibly Professor Lewis's objection to calling it knowledge may be explained by a

[17] P. 132 [this volume, pp. ??].

[18] P. 135 [this volume, pp. ??].

[19] A few realists (e.g., Professor Sellars) suggest that we know our own brains in this inward fashion – but not as brains.

sentence on page 142 of his address: "Knowledge requires the *assurance of truth*; and whatever would prevent actual verification may prevent such assurance." It is true that knowledge requires a certain amount of verification while meaning is entirely independent of it. But outside of mathematics and logic, where have we complete verification? If absolute assurance is requisite to knowledge, can we really be said to know or to know about other people's experiences? Do we have knowledge in this sense even of our own remembered past? The truth seems to be that in all cases of empirical knowledge, the best that we have is well-grounded hypothesis. When we are dealing with the world of existence, our knowledge is not certain but at best probable.

The important question about the realistic position is not, then, Does it possess meaning ? – for no one (and surely Professor Lewis least of all) can successfully deny that it is meaningful. Nor is it the question, Does the realistic hypothesis carry with it absolute assurance and certainty? – for no hypothesis about the existent and empirical is more than probable. The relevant and important questions read thus: (1) Is the realistic hypothesis well grounded? and (2) If it be well grounded, can our assertions about physical objects and events be sufficiently probable to deserve the name "knowledge"? The answer to the second of these queries will, of course, vary according to the particular assertion and the amount of evidence to be found in its favor. As to the first question, it would seem that the hypothesis of an existent physical realm which has a structure of its own, independent of what we think of it, and which is causally related to our experiences, is justified by the same general principle as that which justifies us in rejecting solipsism and accepting, instead, the hypothesis of other minds. For how otherwise are we to explain not only the fact that we get experiences which we do not make and which we did not anticipate, but the more challenging fact that a plurality of people get similar experiences at the same time, that the experiences of the entire human race, in all their qualities and in all their spatial and temporal details, occur, and always have occurred, exactly *as if* there were a physical world acting causally upon us all?

The fact of this interrelation of our experiences is undeniable. The coincidental nature of the experiences is so extraordinary as to cry out for an explanation. The realistic explanation is simple, meaningful, and obvious. What is Professor Lewis's explanation? He rejects the realistic answer; what does he give us in its place? So far as I can discover he gives us nothing. He has no explanation. He leaves us in an inexplicable welter of chance coincidences that have characterized the experience of the race since the dawn of consciousness, and suggests not even the hint of an hypothesis which will throw any light upon this extraordinary situation.

If one compare Professor Lewis's position with that of the logical positivists, and likewise if one compare the book, *Mind and the World Order*, with the presidential address, one can see notable advances. Professor Lewis sees

clearly that meaning is dependent not on verification but on imagination, and he seems to understand that the realistic doctrine fulfills all the requirements of meaning. As yet, however, he has avoided the significant question how the extraordinary coördination of our human experiences is possible. If he will ponder seriously over this question and seek to give us a definite answer to it, I have little doubt that his next position will be one step nearer still to some form of representative realism.

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